CONCURRENT PAPERS & FREE PAPER SESSIONS

Concurrent Session 2

The impact of climate and climatic variations on lymphoedema: outcomes from a PhD study

Susan Witt, Prof. Neil Piller

Földi Clinic

Introduction:
This PhD study aimed to understand how changes in climatic conditions impact on lymphoedema. The mixed methods design involved four main components: Systematic Review, Focus groups, Questionnaires and Comparative measurements.

Method:
This was a mixed method international study that comprised of 4 main components:

1. A Systematic Review was completed to determine what was currently known from the literature and to identify potential knowledge gaps. Conclusions suggest that there remain many gaps in our knowledge of the extent of the impact of climate on lymphoedema, both from a qualitative and a quantitative perspective.
2. Focus Groups explored in depth the patient experience of living with lymphoedema throughout the changing seasons. They were completed with patients from Australia and also with patients in Germany. The clear consensus across all groups was that heat and humidity present additional challenges for managing lymphoedema.
3. A questionnaire was developed from the key focus group themes. Over 1500 responses were received from 27 different countries and in 9 different languages. Results confirm those generated from the focus groups that heat, and humidity are the strongest variables impacting on their lymphoedema.
4. Comparative measures – In an attempt to quantify the physiological changes that occur in response to changing climatic conditions, a single case methodology study applied across two sites in Australia and one site in Switzerland compared a range of measures over a 12-month period. Results were mapped against climatic conditions.

Conclusion and Research contribution:
This research has made a conceptual and practical contribution to the field of lymphoedema care by:

I. Understanding the impact of changing climatic conditions from a patient perspective.

II. Understanding the measurable physiological changes that occur during variations in the climatic conditions.

III. Providing a foundation of knowledge relating to climate and lymphoedema as a basis for further exploration.

IV. Contribute to treatment recommendations in the light of predicted climate change.

Free Paper Session 1.1

Clinical outcomes of indocyanine green lymphography-guided compression garment recommendations in lower limb lymphoedema

Robbie Blackwell, Dr Vincent Singh Paramanandam,
Dr Belinda Thompson, A/Prof Louise Koelmeyer

Australian Lymphoedema Education, Research And Treatment Centre (ALERT)

Introduction:
Compression therapy is the cornerstone of lymphoedema management, yet compression garment prescription remains guided primarily by industry consensus, clinician experience and clinical staging systems rather than an objective understanding of lymphatic pathophysiology. Indocyanine green lymphography (ICGL) enables real-time visualisation of superficial lymphatic drainage and dermal backflow and may offer a systematic approach to individualising compression garment recommendations.

Method:
We conducted a retrospective cohort study of individuals with lower limb lymphoedema managed at our clinic between 2020 and 2024. ICGL findings guided compression garment prescriptions across three key parameters: style/coverage, fabric weave, and compression class. Primary outcomes were changes in limb volume and extracellular fluid (R0, via bioimpedance spectroscopy) at six and twelve months compared with baseline. Secondary outcomes included correlations between ICGL findings and prescriptions, differences between pre-ICGL and ICGL-guided garment parameters, and adherence to ICGL-guided recommendations.

Results:
Data from 35 participants (47 affected limbs) were included. Significant improvements were observed following ICGL-guided interventions. Mean limb volume was reduced by 300 mL at six months and 400 mL at twelve months, while R0 increased by 23 ohms and 29 ohms, respectively, indicating reduced extracellular fluid (both $p < 0.05$). Compression prescriptions correlated strongly with imaging findings: dermal backflow was associated with greater garment coverage and flat knit fabric prescription. The MD Anderson Cancer Centre lymphoedema stage showed a moderate positive correlation with compression class. ICGL-guided prescriptions differed significantly from pre-ICGL garments across all three parameters. At follow-up, no significant differences were found between recommended and worn garments, indicating high adherence.

Conclusion:
ICGL-guided recommendations were associated with significant improvements in limb volume, extracellular fluid, and adherence to compression use. ICGL provided a reproducible framework for translating imaging findings into compression garment prescriptions, supporting its integration into person-centred lymphoedema care.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 1.2

Evaluating an Online Yoga Intervention for Breast Cancer-related Lymphoedema: A Feasibility Study

Sandra Templeton, Dr Suzanne Grant, Margie Hellman, A/Prof Judith Lacey, A/Prof Elisabeth Elder, A/Prof Elizabeth Dylke, A/Prof Cindy Mak, A/Prof Carolyn Ee, Annette Loudon

Chris O'Brien Lifehouse

Introduction:

Breast cancer–related lymphedema (BCRL) is a chronic disease characterised by swelling, discomfort, and functional impairment. Yoga may offer physical and psychosocial benefits but evidence for online delivery remains limited. We developed a 12-week online program based on earlier research for upper limb lymphoedema. The intervention focused on movement and fascial stretching to encourage lymph flow and resilience in the soft tissues mimicking the effect of manual lymphatic drainage. The aim of this study was to assess the feasibility, acceptability, and preliminary effects on symptoms, quality of life and coping of an online yoga intervention for BCRL.

Method:

This single-arm feasibility study enrolled 28 women with post-treatment BCRL. Participants attended 12x60-minute weekly sessions. Feasibility outcomes included recruitment, retention, session attendance, and adherence. Acceptability was measured using the Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), and Feasibility of Intervention Measure (FIM). Secondary outcomes included shoulder range of motion (ROM), bioimpedance (L-Dex), interlimb volume difference, symptom burden (LSIDS-A), quality of life (LYMQOL), and self-efficacy (CBI-B).

Results:

Participants attended an average of 9.6 sessions. Implementation scores indicated strong acceptability, appropriateness, and feasibility (mean >4.2/5). Improvements were observed in shoulder ROM, L-Dex, and symptom burden. Bioimpedance scores showed modest reduction in extracellular fluid from baseline (M=12.4, SD12.5) to follow-up (M=10.7, SD 11.7). Range of motion improved in the affected arm for flexion (149.2° to 160.5°), extension (48.5° to 56.2°), and abduction (134.0° to 153.0°). Symptom prevalence decreased in 16 of 18 domains, particularly for achiness, heaviness, and numbness. LYMQOL scores improved for symptoms, appearance, and overall quality of life. Gains were also seen in coping self-efficacy.

Conclusion:

A 12-week online yoga program for women with BCRL was feasible, acceptable, and associated with improvements in physical function, symptom burden, quality of life and coping. Findings support progression to a randomised controlled trial.

Free Paper Session 1.3

Photobiomodulation therapy for lower leg lymphoedema: A case report integrating PBMT into standard care

Dr Catherine Norton, Kate Perkins

Oncolaser

Introduction:

Lower-limb lymphoedema remains a chronic condition that significantly affects mobility, skin integrity and quality of life. Emerging evidence suggests that photobiomodulation therapy (PBMT) may support lymphatic function through improved microcirculation, reduced inflammation and enhanced cellular repair.

This case report describes the integration of PBMT into an established lymphoedema care pathway for a person with long-standing dependent lower-limb lymphoedema, with the aim of evaluating whether combined therapy could accelerate oedema reduction and improve functional outcomes.

Method:

A middle-aged adult with chronic lower-limb lymphoedema following spinal cord injury underwent PBMT twice weekly for four weeks. PBMT was delivered using both handheld and robotic devices to achieve consistent coverage of plantar, dorsal and circumferential lower-leg regions.

Treatment was conducted alongside manual lymphatic drainage, sequential intermittent pneumatic compression and ongoing compression garments.

Pre- and post-intervention limb circumference measurements were collected at multiple anatomical levels, and clinical observations included skin colour, tissue texture, temperature, and functional ability such as donning footwear and independently managing garments.

Results:

Across four weeks, measurable reductions in limb circumference were recorded at every assessment point, with decreases of up to 3 cm at the malleolar and mid-calf levels.

Immediate tissue responses included softer consistency, reduced purple discolouration, improved warmth in the feet and visible toe definition.

Functionally, the participant achieved the long-standing goal of wearing regular shoes, reporting increased comfort, improved mobility and meaningful gains in confidence and independence.

Reduction in skin dryness and cracking also decreased the risk of ulceration and secondary complications.

Conclusion:

The integration of PBMT into multimodal lymphoedema management was associated with clinically relevant reductions in oedema, improved tissue health and enhanced functional capacity.

This case demonstrates the potential value of PBMT as a non-invasive adjunct supporting lymphatic rehabilitation. Further research is warranted to evaluate dosage, treatment parameters and long-term effects within broader lymphoedema populations.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 1.4

Understanding Lymphatic Lobe Progression in Primary Lymphoedema: Clinical, Functional and Psychosocial Implications Across Three Complex Cases

Anne Bryant

Qakers Road Physiotherapy

Background:
Lymphatic lobe formation is a hallmark of advanced primary lymphoedema and is associated with significant biomechanical, functional, dermatological and psychosocial burden. Early symptoms are frequently overlooked or misdiagnosed, leading to delayed intervention, ineffective compression strategies and preventable progression. This presentation explores three cases illustrating the diverse presentations and severe consequences of late-stage lobe development.

Methods:
A descriptive case-based analysis was conducted using clinical history, surgical outcomes, compression management, functional impact and patient-reported experience. The cases include two female and one male patient with primary lower-limb lymphoedema who developed substantial lymphatic lobes requiring complex medical or surgical management.

Results:
Case 1 describes lifelong undiagnosed primary lymphoedema progressing to massive bilateral lobes, recurrent ulceration, multiple debulking surgeries totalling over 20 kg excised tissue, repeated cellulitis and eventual loss of mobility. Inadequate compression—limited to the calf—contributed to proximal fluid displacement and new lobe formation. Case 2 demonstrates complications of central lobe necrosis, infection and prolonged hospital care. Case 3 depicts early morphological changes suggesting that timely recognition may have prevented subsequent lobe formation. Across all cases, recurrent cellulitis, moisture-associated skin damage, joint degeneration and profound psychosocial effects—including reduced independence, mobility, and employment—were common. Delayed specialist referral, insufficient garment supply, and lack of coordinated multidisciplinary care contributed to deterioration that may have been avoidable.

Conclusions:
Lymphatic lobe formation develops gradually yet indicates advanced lymphatic failure. Early detection, whole-limb compression, accurate garment measurement, proactive skin care and timely escalation to specialist or surgical services are critical to preventing irreversible progression. These cases emphasise the need for improved clinician awareness, structured referral pathways and integrated multidisciplinary care models to reduce morbidity, healthcare utilisation and long-term disability.

Implications for Practice:
Clinicians should consider primary lymphoedema in persistent lower-limb swelling, prioritise comprehensive compression strategies and refer early to trained lymphoedema therapists. Enhanced education and access to imaging are essential to preventing severe lobe development and improving patient outcomes

Free Paper Session 1.5

Innovative Modalities for Managing Fibrosis and Scarring in Oncologic Rehabilitation: Clinical Outcomes Using Cold Laser and Focused Extracorporeal Shockwave Therapy (ESWT)

Dr Lesli Bell, PT, DPT, FAPTA Nicole Stout, PT, PhD, FAPTA, Lucinda (Cindy) Pfalzer

Timberlane Physical Therapy

Background:
Fibrosis and scarring are significant complications in chronic lymphedema (CL). This case series evaluates the clinical outcomes of two regenerative modalities, Cold Laser Therapy (LLLT 904) and Focused Extracorporeal Shockwave Therapy (ESWT), which target tissue physiology at depths beyond manual therapy. This study reviews physiological mechanisms and discusses implications for integrating these tools into comprehensive oncologic and lymphedema protocols.

Case Description: Eight patients (mean age 62.8 years) with CL (mean duration 13.4 years) were treated by a certified lymphedema therapist. Cases included secondary CL related to breast (n=4), cervical (n=1), and oral (n=1) cancers, deep vein thrombosis (n=1), and one case of primary CL. Anatomical focus included the leg/lower quadrant (n=3), face/neck (n=1), and chest wall/breast/arm (n=4).

Intervention: Patients received LLLT 904 and ESWT during sessions (20–55 minutes) integrated with manual therapy, surgical scar myofascial release, ROM exercises, and compression garment fittings. The average number of sessions was 3.25.

Outcomes:
Palpable tissue fibrosis density improved by 70–80% in breast, chest wall, and upper limb cases, and 30–40% in leg cases. All subjects showed improved surgical scar mobility. ROM increased significantly: shoulder (n=3) ; knee (n=2) ; ankle (n=2) ; and neck (n=1) rotation, side-bending, and extension. Performance measures also improved for swallowing, reaching, and sitting tolerance.

Discussion:
Adding Cold Laser and ESWT to standard lymphedema care can augment therapeutic gains in a short duration, even for long-standing, chronic cases. These modalities achieved additional mobility and performance improvements beyond traditional maintenance. Future work should validate ESWT as a stand-alone modality and assess functional impacts in larger cohorts.

Keywords:
Chronic Lymphedema, Fibrosis, ESWT, Cold Laser Therapy, Oncologic Rehabilitation, Scar Management.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 2.1

Cellulitis – What is the scope of Occupational Therapy intervention in an acute hospital setting?

Julia Douglas, Hannah Khoo, Yena Lee-Kang, Bailey Ostrofski, Sophie Whiteside

West Moreton Health Service

Introduction:
Ipswich Public Hospital (IPH) experiences high readmission rates for lower limb cellulitis. Management of recurrent cellulitis varies across IPH and other Australian hospitals, particularly Occupational Therapy (OT) referrals for interventions such as education, compression therapy as well as discharge follow-up protocols. This inconsistency increases the risk of readmissions, adding financial and healthcare burdens. The aim of this retrospective review was to improve cellulitis management at IPH by establishing a clinical pathway focused on promoting OT input within the multidisciplinary team (MDT) in the Medical Assessment and Planning Unit (MAPU).

Method:
An evidence-based clinical pathway was developed using multiple information sources: a literature review on cellulitis management, analysis of IPH data on lower limb cellulitis readmissions, chart audits of MAPU patients with lower limb cellulitis, benchmarking IPH cellulitis management protocols against interstate hospitals, and stakeholder interviews with IPH MDT working in MAPU.

Results:
Analysis revealed gaps in cellulitis management at MAPU, especially inconsistent OT involvement and follow-up care. These findings guided the proposed of a new acute hospital clinical pathway and recommendations for implementation, including self-directed learning guides for OT and MDT working in acute and sub-acute settings to standardize evidence-based treatment and management of all cellulitis presentations.

Conclusion:
The development of a clinical pathway defines a clear OT referral process, related interventions and follow-up options at IPH to ensure consistent, evidence-based cellulitis care. It also emphasizes the importance of educating stakeholders to improve patient access to appropriate post admission follow-up and how to address modifiable risk factors, particularly through monitoring of affected limbs, as well as prescription of conservative management strategies and medical-grade compression therapy for chronic oedema where clinically indicated. Implementing this pathway may help reduce hospital readmissions.

Free Paper Session 2.2

Integrating speech pathology into a regional public hospital multidisciplinary cancer related lymphoedema service.

Jessica Topp, Kari Meehan

Cairns and Hinterland Hospital and Health Service

Introduction:
Speech pathologists (SPs) are key professionals involved in the assessment and management of swallowing and communication disorders associated with head and neck cancer. A common complication of head and neck cancer treatment is lymphoedema, however until recently it has been managed only by trained physiotherapists or occupational therapists. The inclusion of SPs as professionals eligible to complete head and neck specific lymphoedema training has seen a credentialed SP join a cancer-related lymphoedema service in a regional public hospital. The presentation aims to outline the process for, and impact of, integrating an SP into the service.

Methods:
The project used a plan-do-study-act (PDSA) cycle to establish the service and review its impact. The planning phase included exploration of clinical governance and logistical requirements for implementation. The do phase identified further logistical considerations, and the study phase allowed review of the service from the perspective of relevant staff. The act phase utilised these learnings to embed the revised model of care into usual practice.

Results:
Clinical governance considerations identified included access to lymphoedema training and clinical supervision, local credentialling and competency requirements, and the development of relevant documentation including a multidisciplinary (MDT) clinical practice guideline. Logistical considerations included identification of appropriate staff, referral management and resource requirements. The do phase identified additional considerations including adaptations required to statewide guidelines, and local issues including staff leave and maintenance of competencies across the MDT. The study phase identified benefits to both patients and the wider MDT through the inclusion of SP specific head and neck cancer expertise, the importance of supervised, hands-on training as an adjunct to theoretical knowledge, and associated considerations around supervision load.

Conclusion:
We present the successful integration of SPs into a regional MDT cancer-care lymphoedema service, with a model of care developed that could be adapted and implemented across other sites.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 2.3

Informing service development: A qualitative exploration of the lived experiences of lymphoedema and access to health services

Dr Amanda Pigott, Dr Megan Trevethan, Dr Kathryn Marshall, Mary Whitehead, A/Prof Jacqueline Liddle

Princess Alexandra Hospital

Introduction:
Lymphoedema is a chronic condition with physical, functional and psychosocial impacts for individuals. Effective multidisciplinary management of lymphoedema can improve, control and lessen these impacts. However, lymphoedema is an underestimated and widely neglected condition within health systems, leading to challenges in access to and delivery of care. To inform improvements in lymphoedema healthcare services, the perspectives of those living with lymphoedema must first be understood. This study aimed to explore the experiences, needs, and interaction with lymphoedema services for lymphoedema consumers in a Queensland metropolitan Hospital and Health Service context.

Method:
This participatory research study conducted semi-structured interviews of adults with lymphoedema residing in the target area. Purposive sampling through existing lymphoedema services or referral sources was used to identify eligible participants. Interviews were conducted virtually (phone or online). Inductive thematic analysis identified core shared experiences and needs.

Results:
A total of 17 interviews were conducted. Eight had cancer-related lymphoedema, eight had other forms of lymphoedema, and one carer participated. Key themes in the preliminary analysis identified challenges obtaining a lymphoedema diagnosis and accurate healthcare information; unclear pathways to access suitable lymphoedema care; the ongoing cost, burden and consequences of living with lymphoedema; and the perceived need for ongoing follow up care and potential for abandonment from health services. Consumers shared barriers and facilitators to engagement with healthcare services.

Conclusion:
On top of the impacts of living with lymphoedema itself, people with lymphoedema experience significant challenges in identifying and accessing dedicated lymphoedema care that meets their long-term needs. Based on these experiences, key considerations will be highlighted for design and delivery of lymphoedema services.

Free Paper Session 2.4

Improving Lymphoedema Care Pathways: Health professional perspectives on Barriers and Enablers to Effective Service Delivery in a Queensland Metropolitan Hospital and Health Service

Dr Megan Trevethan, Dr Amanda Pigott, Dr Kathryn Marshall, Mary Whitehead, A/Prof Jacki Liddle

Princess Alexandra Hospital

Introduction:
Lymphoedema health services are underfunded and often challenging to access. Expanding existing services presents an even greater challenge with limited funding available. Our team is undertaking a project collating stakeholder perspectives and collaborative recommendations informing codesigned, resource-sensitive service delivery to improve the standard of lymphoedema care in our metropolitan hospital and health service. This sub-study aimed to explore the experiences and needs of health professionals working with lymphoedema services to better understand the barriers and enablers to effective service delivery from the health professional perspectives.

Method:
A series of semi-structured interviews were conducted with health professionals working in lymphoedema or related services in Metro South Hospital and Health Service. To obtain maximum variation in discipline, geographical location and service type, purposive sampling was used to identify eligible participants through interaction with existing lymphoedema services or clinicians. Interviews were conducted virtually (phone or online) to collect experiences, perspectives and needs in relation to service delivery. Inductive thematic analysis was used to construct key, shared aspects of the experience.

Results:
A total of 22 interviews were conducted with Occupational Therapists (n=10), Physiotherapists (n=6), Nurse specialists (n=4), medical staff (n=1) and a service manager (n=1) working in geographical locations spanning the target health service. Key themes identified from the data related to the need for consistent, accessible, streamlined, holistic and equitable lymphoedema care. Specific barriers to providing lymphoedema care were identified, notably in relation to awareness and education of health professionals, and limited funding options for specialist services. Participants identified key considerations and potential solutions for improving practice.

Conclusion:
Providing lymphoedema health services is challenging.
Using information from experienced service providers, new services can build upon their learnings to progress future lymphoedema care.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 2.5

Exploring the processes and pathways occurring for individuals diagnosed with cellulitis: a retrospective medical record audit

Hannah Mcmahon, A/Prof Elizabeth Dylke, Dr Nicola Fearn,
Dr Robyn Sierla

University Of Sydney

Introduction:
Cellulitis, a common skin infection, is a leading cause of hospitalisation in Australia. It causes significant burden for those who experience it, frequently recurs, leading to increased risks of long-term conditions such as lymphoedema. However, little is known about hospital pathways, the criteria used in clinical practice to diagnose cellulitis or how patients are treated once diagnosed. This makes reducing cellulitis hospitalisations and associated costs challenging. This study, therefore, aimed to complete a service evaluation, exploring current processes and pathways for cellulitis diagnosis, management and prevention of recurrence in one tertiary care hospital.

Methods:
A retrospective electronic medical record (EMR) audit of cellulitis admission over four-months in 2024 was undertaken. One hundred and six files were audited. The information extracted were participant demographics, admission descriptives, clinicians' criteria for diagnosis, treatment and/or management provided, referrals completed, length of admission and associated costs.

Results:
Clinicians focused on physical observation of redness, oedema and pain and blood tests to diagnose cellulitis. Most admissions were to the hospital in the home (HITH) program via the Emergency Department. Intravenous and oral antibiotics were the most common treatment. Patient education concerning risk of cellulitis recurrence and how to prevent future infections was rarely documented, despite the 37% who were identified to have a recurrent case of cellulitis. While oedema was commonly identified, treatment or onward referral for management was rarely completed. On discharge, the main referral pathway documented was to general practitioners. The estimated median bed cost for the health system for the sample was $4300.

Conclusion:
This study demonstrates the lack of a standardised diagnostic and limited referral processes to address recurrence risk factors for patients with cellulitis, such as oedema management. These findings suggest that education for health care professionals may be needed to improve understanding of cellulitis risk factors and how to prevent recurrence.

Free Paper Session 3.1

Prevalence, Characteristics, and Risk Factors of Chronic Lower Limb Oedema in Older Adults in Community and Residential Aged Care: A Systematic Review

Maree O'Connor, Dr Helen Badge, Professor Suzanne Kuys,
Dr Michael Steele

Australian Catholic University

Background:
Chronic lower limb oedema reflects impaired lymphatic function and is common in older adults, particularly those with comorbidities such as heart failure and venous insufficiency. It can lead to reduced mobility, wounds, cellulitis, and increased healthcare costs. Despite these impacts, no systematic review has synthesised evidence on prevalence, characteristics, and risk factors in community-dwelling or aged care populations.

Methods:
A systematic review was conducted following PRISMA 2020 guidelines, registered in PROSPERO (CRD420251051535). Six databases (MEDLINE, CINAHL, EMBASE, Scopus, Web of Science, Cochrane) were searched from inception to June 2025 using keywords related to older adults (e.g., elderly, aged, geriatric), chronic oedema (e.g., chronic, persistent, oedema, lymphoedema), lower limbs (e.g., leg, peripheral, lower extremity), and care setting (e.g., community, home care, residential aged care). Eligible studies quantitatively assessed chronic lower limb oedema in adults aged ≥60 years in community or aged care settings and presented lower limb data separately. Chronic oedema was defined according to criteria used in each individual study. Two independent reviewers screened titles, abstracts, and full texts, resolving disagreements through discussion. Data extraction included study design, participant demographics, oedema assessment methods, prevalence, characteristics, comorbidities, and risk factors. Risk of bias was evaluated using the JBI Critical Appraisal Checklist, and certainty of evidence assessed using GRADE.

Results:
The search yielded 2273 records, with 87 articles included for full-text review. Data analysis is ongoing. Final results, including prevalence, characteristics, and identified risk factors, will be discussed.

Conclusion:
This review will consolidate evidence on chronic lower limb oedema in older adults, supporting clinical identification, risk stratification, and management in community and aged care settings, while highlighting research gaps for future study.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 3.2

Fragmented funding and rising costs: Rethinking lymphoedema care in Australia

Katrina Gaitatzis, Lori Lewis, Dr Belinda Thompson, A/Prof Louise Koelmeyer

Australian Lymphoedema Education, Research and Treatment Centre (ALERT), Department Of Health Sciences

Introduction:
Lymphoedema is a chronic, progressive condition that affects physical function and mental wellbeing, contributing to rising costs for individuals and the health care system. Despite its prevalence, access to effective management remains inconsistent across jurisdictions, particularly in relation to compression therapy and specialist services. Individuals often encounter fragmented care pathways, limited insurance coverage, and substantial out-of-pocket expenses, which can delay intervention and contribute to disease progression. This study explores the financial burden of living with lymphoedema, focusing on key cost drivers such as hospitalisation for cellulitis, productivity loss, and psychological impacts. It also examines reimbursement policies and regional disparities to identify opportunities for national coordination and improved care delivery.

Method:
A literature review was conducted to examine the financial and systemic challenges of lymphoedema care. Sources included peer-reviewed articles, government health websites, and public documentation on state-based subsidy schemes. Thematic analysis identified recurring patterns in access barriers, funding inconsistencies, and cost-related impacts across care settings and jurisdictions.

Results:
Key cost drivers include hospitalisation for cellulitis, productivity loss from missed workdays, and the high cost of compression garments. Public subsidies for compression therapy vary significantly across Australian states, with eligibility criteria often excluding individuals with private insurance, aged care residents, and hospital inpatients. These exclusions delay treatment and increase complication. The absence of a national comparator cohort limits assessment of early intervention cost-effectiveness. A coordinated patient pathway model could support tracking across disease stages, helping quantify financial burden and identify care delivery gaps.

Conclusion:
Lymphoedema care in Australia is characterised by fragmented funding and inconsistent access. These systemic issues contribute to preventable complications and increased healthcare costs. A national framework, supported by a structured patient pathways and collaboration among stakeholders, is essential. Standardising care and expanding access to compression therapy and specialist services would reduce financial burden and improve outcomes.

Free Paper Session 3.3

Is a multidisciplinary, consultancy type model of care effective in the management of chronic oedema in rural residential aged care, acute and community Settings? Evaluation of the oedema management program

Yvette Morton

Western District Health Service

Introduction:
In 2022, an Oedema Management Program was introduced at a campus of an Australian rural healthcare service. The program was conducted across three healthcare settings: Residential Aged Care (A), Acute (B) and Community (C) using a multidisciplinary, consultancy type model and evaluated over a 7 month period.

Method:
An Oedema Identification and Referral form was created and implemented on admission and every 3 months for all patients and residents. The form helped to identify oedema, initiate required Allied Health and Medical referrals, and monitor oedema.
A Lymphoedema Therapist attending the campus weekly to provide a service to residential aged care, acute, and run a free community surveillance and management group.

Results:
The community setting had an average of 7 attendees per week with n=15. 83.87% of Hostel Aged Care consumers were identified as having oedema and/or skin health issues and 74.19% oedema only. N=17 were eligible for evaluative research. The program was not adopted in the Nursing Home section of Aged Care or Acute. All circumferential limb measurements in both setting A and C combined reduced between baseline and 3 month and baseline and 6 months, showing a reduction in limb size and therefore oedema severity. Data for setting C showed improvements in all four domains of the Lymphoedema Quality of Life Questionnaire. However the overall quality of life score showed a very slight decrease.Community consumer feedback indicated the service was accessible and addressed a gap; consumers found benefit from the service; felt the program assisted in other health care needs and wanted the program to continue.

Conclusion:
Due to the high prevalence of oedema and skin health issues identified, continuation and expansion of the program to the health service's other campuses was strongly recommended with recommendations given to enable greater reach and adoption of the program.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 3.4

The economics of misdiagnosis: Estimating the true cost of delayed lipoedema and lymphoedema care in Australia

Dennice Allen

Motion For Momentum

Introduction:
Missed or delayed diagnosis of lipoedema and lymphoedema remains a critical barrier to effective and timely care in Australia. While the clinical implications are well-documented, limb progression, pain, and psychological distress, the broader economic impact remains poorly understood. This presentation explores the financial burden associated with diagnostic delays, highlighting the implications for patients, healthcare systems, and policy.

Presentation:
Using a hybrid cost-of-illness and comparative economic modelling framework, this presentation estimates the incremental costs associated with delayed diagnosis of lymphatic conditions. Drawing on assumptions from published Australian and international sources, including data on hospitalisations such as cellulitis episodes, compression garment expenditure, mental health, and productivity loss, this analysis contrasts early and delayed care trajectories. Patient-level costs such as out-of-pocket expenditures, time off work are mapped alongside system-level costs namely hospital admissions and repeat interventions. The modelling also incorporates examples of lipoedema patients misdiagnosed with obesity, leading to ineffective treatments and long-term physical combined with psychological burden.

Outcomes:
Preliminary findings suggest delayed diagnosis leads to a two- to threefold increase in total costs per patient annually. These include higher rates of hospitalisation, therapy use, and unmanaged psychological distress. Cost comparisons will be presented in a simplified visual model to support multidisciplinary interpretation.

Implication:
Very few Australian studies have examined the economic cost of missed diagnosis in lymphatic conditions. This presentation offers a foundational framework for future research and advocacy. Recommendations will be proposed for policy reform, including universal garment subsidy access, national screening protocols, and funding for early intervention. It aims to provoke critical discussion on the cost of inaction and the economic rationale for preventative models of care.

Free Paper Session 3.5

A scoping review of access to lymphoedema care using the Candidacy Framework

Natalie Kruger, Dr Peter Window, Dr Melanie Plinsinga,
Prof Sandi Hayes, Dr Samantha Bunzli

Griffith University & Queensland Health

Introduction:
Timely access to lymphoedema care is critical for optimising health outcomes. However, challenges have been reported by people accessing timely lymphoedema care worldwide. This scoping review aimed to examine access to lymphoedema care from the perspective of people with lymphoedema and healthcare professionals (HCP).

Method:
Timely access to lymphoedema care is critical for optimising health outcomes. However, challenges have been reported by people accessing timely lymphoedema care worldwide. This scoping review aimed to examine access to lymphoedema care from the perspective of people with lymphoedema and healthcare professionals (HCP).

Results:
A review of quantitative, qualitative and mixed-methods literature was undertaken guided by the Candidacy Framework, which describes factors influencing care access along the healthcare journey. Articles were eligible for inclusion if they were i) published in a peer review journal between 2000-2025, ii) available in English, iii) comprised of primary data that could be mapped to Candidacy domains, iv) from people with lymphoedema and HCP, v) conducted in countries with developed economies. Key data were extracted, with inductive and deductive coding techniques applied, and synthesised into themes.

Conclusion:
Multi-level challenges to access were evident across the lymphoedema care journey. Future partnerships with key stakeholder groups could identify priorities for action, to facilitate timely, best-practice care for people with this chronic medical condition.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 4.1

Developing a discrete choice experiment to explore preferences for lymphoedema management in Australia from the perspective of people living with lymphoedema

Dr Nicola Fearn, A/Professor Elizabeth Dulke, Dr Zobaida Ahmed Piu, A/Professor Alison Pearce

The University Of Sydney

Background:
Discrete choice experiments (DCEs) can quantify consumer preferences for health services. In lymphoedema management, where treatment involves complex trade-offs between efficacy, time burden, and financial costs, DCEs can elicit patient priorities and inform shared decision-making, service design and clinical policy. This study describes the process for developing and refining the attribute and levels of a DCE exploring consumer preferences for lymphoedema management strategies.

Methods:
DCE attributes and levels were identified through a literature review and clinician consultation, then refined by a lived experience panel with diverse lymphoedema types. Cognitive interviews (n=10), using think-aloud techniques and verbal probing, will assess the comprehensibility, relevance and completeness of the of hypothetical choice scenarios. Interview findings will be presented to the lived experience panel for further discussion and refinement prior to DCE survey deployment. This iterative process ensures the final instrument reflects authentic consumer priorities and perspectives, while still collecting evidence to inform practice and policy.

Results:
A long list of 10 attributes with 3-6 levels were presented to the lived experience panel and initially reduced to 7 attributes with 6 levels each. Final review by clinicians, researchers and the lived experience panel reduced this to 6 attributes with 4 levels each. Cognitive interviews are underway at the time of submitting this abstract. Results from the co-design and cognitive interview process will be presented at the conference.

Conclusions:
This rigorous development process, integrating cognitive interviews with lived experience panel co-design and review, ensure DCE attributes reflect authentic consumer priorities in lymphoedema management, providing a robust foundation for quantifying patient values and informing patient-centered care delivery through a DCE survey.

Free Paper Session 4.2

When collaboration and commitment come together, we can move mountains; how patient advocacy has contributed to improvements in the Australian lymphoedema care landscape.

Monique Bareham

Flinders University

Introduction:
Lymphoedema is a progressive chronic condition which remains under-recognised by health professionals and systems. This leads to inequitable access to evidence-based care and compression garments, and poorer health outcomes for many Australians. A lack of Australian data on the prevalence of lymphoedema results in inappropriate funding for public health services and subsidies. Meanwhile, sustained strategic patient advocacy and co-designed research aim to address this health data gap and help to drive improvements in lymphoedema healthcare delivery across Australia.

Presentation:
This presentation will demonstrate how more equitable lymphoedema healthcare delivery can be achieved when patients, health professionals, researchers and industry collaborate through inclusive advocacy. Specifically, the presentation will focus on a case study showing how patient led advocacy significantly contributed to the establishment of the South Australian compression garment subsidy scheme and improvements in access to affordable lymphoedema care statewide. Additionally, it will overview how the patient advocate voice was instrumental in the publication of the first Australian Institute of Health and Welfare (AIHW) report into the prevalence of lymphoedema in Australia.

Outcomes:
Both milestones have greatly increased the national awareness of lymphoedema, directly improved health outcomes of many through improved access to evidence-based care and garments, and laid important foundations for future patient centred, co-designed lymphoedema research and advocacy collaborations.

Implication:
Inclusive, patient focussed advocacy reaches the highest levels of the Australian health and policy sectors highlighting the urgent need to better understand the prevalence of lymphoedema and it's impacts on Australian individuals, healthcare services and society. It continues to positively influence and shape lymphoedema care and research Nationwide, while improving health outcomes by bringing greater access to affordable care and garments to thousands of vulnerable Australians.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 4.3

How can occupational therapists support patient implementation of lymphoedema treatment recommendations? A retrospective cohort study

Erryn Siva, Susie Veart, Caitlin Beck, Eliza Briggs, Indi Rogers, Simone Priestly, Angela Jacques, Dr Kristie Harper

Sir Charles Gairdner Hospital

Introduction:
Patient implementation of treatment recommendations for lymphoedema management in breast cancer related lymphoedema (BCRL) is often considered suboptimal. This study assessed implementation levels of occupational therapy treatment recommendations for BCRL to determine key barriers and enablers that influence implementation.

Method:
A retrospective cohort study was conducted using clinical data from a tertiary hospital's prospective surveillance model of care for early BCRL detection and intervention. Patients who received occupational therapy were included, and implementation levels were compared above and below a 70% threshold.

Results:
Among 63 patients (median age = 60 years, [IQR] 47.0-70.0), 73% (n=46) implemented more than 70% of recommendations, and 29% achieved full implementation. Pain (54%, n=34) was the most cited barrier, whilst strong support networks (63.5%, n=40) was the leading enabler. Lower levels of implementation were associated with right-sided cancer (p=0.044), taxane chemotherapy (p=0.004), fewer therapy interventions (p<0.001), undergoing interventions other than sentinel node procedures (p=0.022), psychosocial barriers (p=0.010), and high treatment burden (p=0.004). Multivariable analysis showed sentinel node biopsy (OR = 4.12, 95% CI 1.16 – 14.58, p = 0.028) and left limb involvement (OR = 4.82, 95% CI: 1.33 – 17.46, p = 0.017) significantly increased odds of optimal implementation.

Conclusion:
Most patients implemented over 70% of BCRL treatment recommendations, however understanding and addressing clinical and psychosocial factors can optimise implementation in cancer survivors, leading to improved health outcomes.

Free Paper Session 4.4

"Comfort gave me control again": using lived experience to inform patient-centred lymphatic care following breast cancer treatment

Cheryl Pollock

ChezLeon Australia Pty Ltd, Australia

Introduction:
Compression therapy remains foundational to lymphoedema management; however, lived experience of compression intolerance is often under-represented in clinical discourse. Heat, discomfort, body-image concerns, and emotional fatigue significantly influence adherence and long-term engagement. Understanding these patient-reported barriers is essential for clinicians seeking to optimise real-world lymphatic care outcomes.

Method:
A participatory product-evaluation and co-design process was undertaken with 53 breast cancer survivors experiencing lymphatic symptoms following surgery and/or radiation therapy. Participants completed a single structured questionnaire after a defined wear period with a gentle, non-compression differential-pressure support insert.

The questionnaire captured retrospective self-reported symptoms prior to use and perceived changes during use, alongside open-ended participant comments describing their wear experience. Evaluation domains included comfort, usability, wear tolerance, perceived symptom change (heaviness, swelling, discomfort), body-confidence, and integration into daily life. The evaluation was conducted without clinician involvement and was designed as a feasibility and lived-experience exploration rather than a formal clinical study, with appropriate attention to participant consent, safety, and privacy.

Outcomes:
Participants consistently prioritised comfort, discretion under clothing, and restoration of confidence as critical to ongoing use. Many described long-term distress and "guilt" associated with poor tolerance or avoidance of compression garments. Across responses, participants reported improved comfort, reduced awareness of heaviness or congestion, and increased willingness to engage in daily self-management. Several described consistent daily wear and a renewed sense of control over symptoms. The findings highlight the importance of recognising how psychosocial burden and comfort directly influence adherence and perceived treatment experience, offering valuable insight for clinicians supporting long-term lymphatic care.

Implications:
Embedding lived experience into lymphatic care development provides clinicians with actionable insight into adherence challenges not always visible in clinical settings. Patient-centred, low-burden support strategies may enhance engagement, dignity, and sustained self-management when used alongside established lymphatic therapies. Future evaluation will explore how these approaches may be integrated into survivorship and maintenance-phase care pathways.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 4.5

Enhancing Patient Centred Care in Lymphoedema and Lipoedema Management: the use of co-designed feedback questionnaire

Yolande Borthwick, Lorraine Brown

British Lymphology Society

Background:
Management of chronic conditions such as lymphoedema and lipoedema requires not only appropriate clinical interventions, but also an understanding of patients' experiences and confidence. Following a workshop with Lymphoedema Clinicians where the need for a specific feedback mechanism was identified, the British Lymphology Society (BLS) developed a patient-feedback questionnaire, co-designed with patient associations and tested by patients. The aim of the questionnaire is to capture patient satisfaction around key areas identified by both the clinicians and patients. This abstracts reports on findings from the use in 2 specialist clinics.

Methods:
One clinic allowed patients attending the specialist lymphoedema clinic to complete the questionnaire whilst attending. The other posted out questionnaires and collated the information from those returned. Data is aggregated to provide descriptive statistics and to highlight areas of service improvement.

Results:
The questionnaire was completed by 55 patients (48% of the possible). 43% were new patients and 57% reviews. Preliminary findings indicate that patients felt well-informed before their appointments (100%) and mental wellbeing was considered (85%). Goal setting practices were clear and understood (95%) and confidence in self management was high (85%) with 52% scoring their self efficacy as 10/10. For those who completed the questions about hosiery 98% were happy with the process. The free-text responses commented on the importance of consulting with an expert, being listened to and the importance of timely appointments.

Conclusions:
The use of this questionnaire underscores the importance of ongoing goal setting as well as ensuring confidence in the individuals own management plan. It is important to services that patients are actively involved in their care and that this can be evidenced. Analysis of the respondents and discussion within patients will inform targeted approaches to increase questionnaire participation rates, ensuring diverse patient perspectives are captured in future audits.

Free Paper Session 5.1

The total burden of lipoedema: How physical symptoms, care fragmentation and financial strain shape the lived experience

Jen Bartlett

Lipoedema Australia

Introduction:
Lipoedema is a chronic and painful condition that affects mobility, confidence, daily functioning and overall quality of life. Yet for many people, the greatest challenge is not just the physical symptoms—it is navigating a health system that does not recognise or adequately support their needs. Individuals commonly spend years seeking answers, being redirected between multiple practitioners and receiving conflicting advice. This extended uncertainty adds emotional, financial and mental load that significantly shapes their long-term wellbeing.

Presentation:
This presentation explores the interconnected burdens experienced by people living with lipoedema, drawing on recurring themes observed across support networks, community interactions and patient pathways in Australia. Pain, hypersensitivity, mobility limitation and bruising contribute to functional impairment and reduced participation in daily activities. Diagnostic uncertainty leads to repeated consultations across multiple disciplines, often without meaningful guidance, resulting in frustration, loss of trust and delays in initiating appropriate management. Out-of-pocket costs: compression garments, conservative therapies, specialist consultations and travel – intensify the burden, particularly where access to experienced clinicians is limited. The cumulative mental load of self-advocacy, navigating inconsistent advice and managing a chronic condition further compounds health impacts. These system-level failures contribute to worsening symptoms, including secondary lymphatic insufficiency, increased swelling and reduced physical capacity.

Outcomes:
By describing the total burden – physical, emotional, financial and practical, the presentation offers a clearer understanding of how living with lipoedema affects daily life and access to care.
It highlights how fragmented pathways and inconsistent messaging can escalate distress, reduce engagement and limit opportunities for early intervention.

Implication:
Recognising the full scope of this burden is crucial for improving future care. A more coordinated approach, clearer referral options and greater awareness among health professionals can help reduce diagnostic delays, lessen psychosocial strain and support better long-term outcomes for individuals with lipoedema.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 5.2

Advancing Lipoedema Care in Australia: Identifying Practice Variation and Initiating National Clinical Dialogue

Lisa Higgins

Lisa Higgins Massage

Conflicting international lipedema guidelines present lymphoedema therapists with incompatible messages about pathophysiology, prognosis and treatment, complicating clinical decision-making and patient communication. This abstract compares four influential documents to illustrate how divergent frameworks translate into everyday dilemmas for Australasian practice.

Background:
Lipoedema affects millions of Australian women, yet conflicting international guidelines create substantial practice variation among lymphoedema therapists, undermining consistent, evidence-informed care. Recent documents—the German S2k guideline (2024), Wounds UK Best Practice (2017), JWC European consensus (2020), and US Standard of Care (2021)—offer divergent views on pathophysiology (oedema-free fat disorder vs lymphatic involvement), diagnostic criteria (pain mandatory vs optional), progression (conditional vs inherent), weight loss efficacy, MLD/CDT rationale, and liposuction indications.

Aim and Methods:
This abstract compares these four guidelines to highlight key conflicts impacting Australian clinicians, advocating for national dialogue to standardise practice and elevate lipoedema care. A structured narrative analysis examined domains including oedema/lymphatic framing, pain/progression thresholds, obesity management, conservative therapies, and surgical expectations.

Key Findings:
All guidelines endorse multidisciplinary conservative care (compression, exercise, psychology) for this painful, disproportionate adiposity disorder, but therapists face dilemmas: justify MLD as decongestive (UK/US) or pain-modulating only (German/European)? Counsel weight loss as limb-volume reducing (German) or largely ineffective on lipedema tissue (US)? Frame liposuction as cautious (European) or disease-modifying (US)? Such inconsistencies erode practitioner confidence, fragment care pathways, and confuse patient expectations.

Implications:
Australian therapists navigate these differences of opinion, risking suboptimal outcomes amid rising referrals and advocacy. This presentation uses clinical vignettes to demonstrate guideline-driven practice variation and proposes initiating ALA-supported national consensus development—via workshops, Delphi process, or position statement—to harmonise approaches, enhance therapist training, and position Australia as a leader in equitable lipoedema management.

Free Paper Session 5.3

The reliability of tissue di-electric measurements in the lower limb.

Helen Eason, A/Prof Elizabeth Dylke, Dr Nicola Fearn

Helen Eason Physiotherapy/ University Of Sydney

Background:
Tissue Di-electric Constant (TDC) has proven reliability measuring localised tissue water in lymphoedema. However, reliability and measurement error for use in lipoedema populations have not been established. This study aimed to investigate TDC reliability in women with large-girthed legs who self-identified as having lipoedema, and/or lymphoedema.

Methods:
Women were assessed using TDC at bilateral locations: medial ankle, lateral ankle, medial shin, anteromedial knee, mid anterior thigh, lateral hip and mid abdomen. Two blinded examiners completed TDC measures in triplicate. Inter-rater reliability of mean TDC at each location was determined using intraclass correlation coefficient calculations (ICC). Measurement error was calculated using standard error of measurement (SEM) and smallest detectable change (SDC).

Results:
Our sample of 57 women had a mean age of 56 years (range 18-77), mean BMI 34.5 (range 18.4-59.5), mean waist-hip ratio 0.76 (range 0.45-0.92), mean waist-height ratio 0.57 (range 0.34-0.83). TDC values measured by raters were significantly different at all locations ($p \leq 0.001$). Mean differences in TDC values between raters ranged from 1.01%(lateral hip) to -2.67% (lateral ankle). TDC had good to excellent inter-rater reliability for all locations. Measurements were most reliable at the medial ankle (ICC 0.90), and least reliable at the abdomen (ICC 0.77). The inter-rater SEM ranged from 0.76 at the medial ankle to 1.39 at the lateral ankle. The SDC ranged from 4.90 at the thigh to 8.24 at the lateral ankle.

Conclusions:
While inter-rater reliability was good to excellent at all locations in women with large-girthed legs when using the mean of triplicate measurements, TDC values between raters were statistically different, indicating a limited agreement in scores between raters. The lateral ankle displayed the largest inter-rater SEM and SDC, indicating that this location causes challenges for reliable TDC measurement. Our findings highlight the influence of measurement site location on TDC reliability.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 5.4

Beyond body mass index: evaluating anthropometric measures in women with lipoedema.

Dr Belinda Thompson, A/Prof Leigh Ward, A/Prof Helen Mackie

Australian Lymphoedema Education, Research And Treatment Centre (ALERT), Macquarie University

Introduction:
Lipoedema is a painful condition characterised by the disproportionate accumulation of adipose tissue, typically affecting the lower limbs and sometimes the arms, while sparing the hands and feet. It is frequently mistaken for obesity, although both conditions can coexist. Body mass index (BMI) is commonly used to classify overweight and obesity; however, in individuals with lipoedema, elevated BMI may reflect abnormal adipose tissue accumulation in the lower body rather than generalised obesity. This study aimed to compare BMI and waist-to-height ratio between women with lipoedema and control participants, and to examine group differences in waist-to-hip ratio as an indicator of body distribution.

Method:
A total of 1,382 female participants aged 18–80 years were included. Of these, 102 had a clinical diagnosis of lipoedema and 1,280 were control participants. Anthropometric data including height, weight, waist, and hip circumference were collected. Independent t-tests were used to compare BMI, waist-to-height ratio, and waist-to-hip ratio between groups.

Results:
BMI was significantly higher in the lipoedema group compared to controls (32.7 ± 7.5 vs 28.5 ± 7.6, $p > 0.001$), while waist-to-height ratio was significantly lower in the lipoedema group versus controls (0.54 ± 0.1 vs 0.60 ± 0.1, p.0.001). Waist-to-hip ratio was also significantly lower in the lipoedema group compared to controls (0.75 ± 0.1 vs 0.899 ± 0.1, $p>0.001$), reflecting adipose distribution predominantly toward the lower body. BMI misclassified 45.1% of the lipoedema group compared to 14.7% of controls. Among those in the overweight to obese class I range, 79.2% of the lipoedema group were misclassified versus 22.3% of controls.

Conclusion:
BMI may significantly misclassify individuals with lipoedema, especially in the overweight and obese class I range. Waist-to-height ratio may be a more appropriate measure, supporting accurate identification of concurrent obesity and enabling tailored, supportive health interventions to improve overall wellbeing.

Free Paper Session 5.5

Waist to height ratio as an alternative measure to body mass index reduces the diagnosis of obesity in the lipoedema cohort

Lucy Melican

Lymphoedema Private Physiotherapy

Background:
It is widely reported and accepted that obesity commonly coexists with LI. In this study we examined a set of retrospective data to determine if WHtR was a more accurate biometric than BMI in quantifying the level of overweight and obesity in the LI cohort. This paper demonstrates that obesity is over-reported in the LI population when using the BMI measurement.

Method:
The data was extracted from the standard initial assessments of 151 consecutive assessments of adult females diagnosed with LI in the lead author's clinic that satisfied the inclusion criteria. WHtR (waist measurement divided by height in cm) and BMI measurement (weight in kg divided by height in metres squared) were calculated for each participant. Self-reported metabolic markers were recorded for each patient.

Results:
BMI results in our LI cohort showed 63.6% of participants were obese, similar to four comparable population studies which found 50% to 86.7% of individuals with LI were in the obese category. When categorised using WHtR instead of BMI, 31.7% of the LI cohort were in the obese category, 50% lower than when using BMI. Patient-reported metabolic clinical markers concurred with the WHtR categorisation of "less at risk" in relation to general health in the LI population, however this warrants further investigation.

Conclusion:
Our study shows that the WHtR biometric diagnoses 50% fewer individuals with LI as obese than the BMI biometric, as it considers the distinct gynoid body fat distribution of LI and the central adiposity of obesity. Research indicates that WHtR is a more accurate tool in diagnosing life-shortening overweight or obesity in the general population, and we contend is a more sensitive tool than BMI to identify the presence of overweight or obesity in the LI cohort.

Abbreviation Key:
WHtR waist to height ratio

LI lipoedema

LO lymphoedema

BMI body mass index

Metabolic markers used were cholesterol, blood sugar levels, Liver function test/fatty liver and blood pressure. The results were patient reported based on a blood test in the past 12 months. This warrants more detailed investigation in future studies.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 6.1

Exploring the relationship between ICG Lymphography and Percentage Water Content in Lymphoedema Assessment

Dr Megan Trevethan, Dr Amanda Pigott

Princess Alexandra Hospital

Introduction:
Quantitative assessment of lymphoedema is necessary for lymphoedema detection, measurement and monitoring for change over time. Multiple objective lymphoedema assessment methods exist that measure varying features of lymphoedema. ICG-Lymphography (ICG-L) is an imaging assessment able to demonstrate lymphatic architecture dysfunction via observation of dermal backflow (DBF) regions. A Lymphscanner is a handheld assessment device measuring surface tissue water content via percentage water content (PWC). The relationship between these assessments is not well understood. This study aimed to explore the relationship between ICG-L and Lymphscanner findings in cancer-related lymphoedema.

Method:
A prospective observational study explored relationship between these two assessment methods in unilateral limb lymphoedema. The study received ethics approval, and all participants provided written consent for participation. Consecutive participants attending for ICG-L to unilateral arm cancer-related lymphoedema were also assessed at designated body segments using the Lymphscanner. The relationship between dermal backflow (DBF) and PWC findings at each segment was explored using concurrent validity assessment by calculating the correlation coefficients. The level of agreement in the detection of lymphoedema between the segment measurements and the PWC was assessed with the Cohen's kappa coefficient.

Results:
A total of 24 participants were included, with upper limb (n=19) lymphoedema. A total of 114 body segments in affected limbs were compared for concurrent validity. Preliminary analysis indicates the presence of DBF was noted in 97 body segments. Reference data for PWC relative to limb region was used to determine threshold for lymphoedema.

Conclusion:
This study will inform the potential use of lymphscanner assessments to monitor progress after ICG-L. These findings may be useful for clinical services without access to ICG-L and may reduce the need for repeated assessments with ICG-L.

Free Paper Session 6.2

Breast Lymphoedema: Evaluating tissue dielectric constant, ultrasound and indocyanine green lymphography: A pilot study

Lori Lewis, A/Prof Louise Koelmeyer, Cheryl Brunelle, A/Prof Hiroo Suami, Katrina Gaitatzis, Asha Heydon-White, Prof John Boyages, A/Professor Helen Mackie, Prof Alphonse Taghian, A/Prof Leo Tsai, Dr Vincent Singh Paramanandam, Dr Charissa Kim

Australian Lymphoedema Education, Research and Treatment Centre (ALERT), Macquarie University

Introduction:
Breast lymphoedema (BL) is a common yet under-recognised complication following breast-conserving treatment (BCT). It is associated with breast pain, cosmetic changes, and recurrent cellulitis, all of which negatively impact quality-of-life. Despite this, BL remains poorly understood, and there are currently no validated assessment tools or standard diagnostic criteria. Objective measures such as ultrasound (US) and tissue dielectric constant (TDC) show promise for assessing local tissue changes, however, these methods have not been validated against lymphatic imaging or integrated into routine care. Establishing reliable, objective methods for BL detection is essential to guide screening, diagnosis, and management.This pilot study is an international collaboration between two sites that aims to summarise current BL research and test the study protocol for a larger longitudinal study. The primary objective is to assess study feasibility and generate preliminary validation data for US and TDC in detecting BL after BCT.

Method:
Each site will recruit 30 participants who will attend a single study appointment. During the appointment data will be collected on patient-reported symptoms, clinical assessment, US and TDC measures of breast tissue, arm volumes, and extracellular fluid levels. Additionally, clinical photographs will be taken, and at one site participants will undergo indocyanine green lymphography (ICGL) of their breasts.

Results:
We will present the study protocol and describe different assessment modalities used to evaluate tissue changes and lymphatic drainage patterns in BL. Additionally, case studies will be presented to compare objective measurement tools (US and TDC) and their alignment with clinical diagnosis and ICGL.

Conclusion:
Insights gained will guide the development of a larger multicentre study aimed at defining the natural history of BL and validating practical screening and diagnostic tools, to inform potential early intervention strategies.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 6.3

Integration of AI and 3D imaging in lymphoedema diagnosis: Accuracy, reliability, and clinical implications

David Bunce

3d Metrix Pty Ltd

Introduction:
Lymphoedema is a complex condition where early detection plays a vital role in improving patient outcomes and guiding treatment strategies. Previous presentations have documented the 3D imaging system used in the ICON3 study protocol, highlighting its advantages in speed, reproducibility, and patient comfort compared to traditional methods.

Presentation:
This presentation builds on this foundation; the current study evaluates the diagnostic accuracy and reliability of artificial intelligence (AI) systems applied to high resolution 3D scan data obtained from clinical research partners. The approach leverages Segmental Morphometric Index (SMI) metrics derived from 3D imaging, enabling precise quantification of volumetric changes and shape variations across limb segments. AI models were developed using longitudinal scan data combined with patient metadata and clinical annotations and validated against clinician confirmed lymphoedema diagnoses. Key objectives included determining sensitivity and specificity of AI generated classifications, identifying segmental swelling patterns, and assessing the ability to differentiate reversible oedema from fibrotic progression.

Outcome:
Preliminary findings indicate that AI based analysis demonstrates high diagnostic accuracy, (91%) in arm based lymphoedema cases, with consistent performance across repeated scans and diverse patient profiles.

Reliability methods and outcomes: Reliability was assessed through repeat scan consistency and intra session stability, demonstrating tightly clustered repeated measure values and minimal variance drift, confirming strong reproducibility of both the imaging system and AI derived metrics.

Implications:
This study highlights the potential of AI driven tools to support earlier intervention, streamline diagnostic workflows, and enable personalised treatment planning. Future work will expand datasets to include bilateral and whole body applications, refine predictive thresholds, and pursue regulatory validation for device

Conflict of interest
The presenter is an owner of the company seeking to commercialise this technology.

Free Paper Session 6.4

Bioimpedance Spectroscopy in Older Adults: Body Composition, Fluid Balance, and Practical Challenges

Kerryn Tutt, Maree O'Connor, Adriaan Rossouw, Christina Clifford, Thomas Grant

VitalAge Oedema and Wellbeing Physiotherapy

Introduction:
Bioimpedance spectroscopy (BIS) offers a non-invasive method to evaluate body composition, including fluid distribution and muscle and fat mass. In older adults, particularly those living in residential aged care, these parameters can provide valuable insights into hydration status, muscle health, and potential risk for conditions such as oedema and heart failure. Despite its potential, limited data exist describing BIS measurements and the practical challenges of using this technology in this population. This study aimed to describe the experience and findings from BIS assessments conducted among older adults in residential aged care settings.

Methods:
Older adult residents from four residential aged care facilities underwent body composition assessment using the SOZO® bioimpedance spectroscopy device. Height was measured on the day of assessment. BIS outputs included total body water, intracellular and extracellular fluid (both total and segmental), hydration index (Hydex), heart failure index, muscle mass, fat mass, weight, and lymphedema index (L-Dex). Challenges encountered during assessment, including ensuring adequate skin contact and difficulty obtaining good Cole plots, were documented. Cole plots were reviewed for quality control, and measurements with poor Cole plots were excluded from analysis.

Results:
At the time of abstract submission, 181 residents had completed a BIS assessment with mean (SD) age of 85.6 years (7.6) including 114 female residents (63%). Assessments are currently ongoing and will conclude December 2025. Analyses will include exploration of relationships between fluid balance, body composition, and clinical characteristics, with results to be presented at the conference.

Conclusion:
Preliminary observations indicate that BIS using the SOZO® device is feasible in residential aged care, although challenges such as achieving adequate skin contact and obtaining reliable Cole plots were noted. Final results will provide valuable descriptive data on body composition and fluid distribution in older adults and inform future BIS applications in aged care

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 6.5

Short-term stability of bioimpedance spectroscopy measures in participants with lymphoedema and controls

A/Prof Leigh Ward, Dr Belinda Thompson, Dr Vincent Singh Paramanandam, Ms Lori Lewis, A/Prof Louise Koelmeyer

Australian Lymphoedema Education, Research and Treatment Centre (ALERT), Macquarie University

Introduction:
Bioimpedance spectroscopy (BIS) is widely used to assess extracellular fluid and detect lymphoedema. BIS calculates resistance at zero frequency (R_0), which is used to derive the L-Dex score, a clinical index comparing limb impedance to normative values to identify fluid changes. While BIS is considered reliable, short-term stability under typical clinical conditions is less understood. This study examined short-term stability of BIS measures in healthy controls and participants with arm or leg lymphoedema.

Method:
A total of 136 healthy controls (52 males) and 52 participants with lymphoedema (8 males) were assessed using three SOZO BIS devices (ImpediMed, Brisbane). Participants cycled through the devices and were measured three times on each device, remaining standing between measures. The percentage change in R_0 between the first and last measure on each device (approximately 30–40 minutes apart) was calculated, and the mean of the three devices was used for analysis.

Results:
In participants with lymphoedema, mean percentage change in R_0 was: dominant arm = 1.4% ±1.6, non-dominant arm = 1.2% ±1.3, dominant leg = –2.6% ±1.9, and non-dominant leg = –2.2% ±1.8. In control participants, changes were: dominant arm = 1.1% ±1.8, non-dominant arm = 0.7% ±1.9, dominant leg = –2.9% ±1.4, and non-dominant leg = –2.2% ±1.5. Arms tended to show increased R_0 while legs decreased, reflecting fluid shifts due to gravity associated with prolonged standing.

Conclusion:
Short-term BIS measures show minor fluctuations influenced by factors such as time standing. These fluctuations should be expected and but have limited impact on unilateral L-Dex scores, which use the contralateral limb for comparison, but could more heavily influence bilateral leg L-Dex calculations that rely on arm values as reference. Without strict control of posture and timing, clinicians should anticipate small variations in R_0, and consequently L-Dex.

Free Paper Session 7.1

Five-years of consistent self-care can reduce limb size in the absence of professional care

Dr Patricia Graves, A S M Sultan Mahmood, Dr Janet Douglass

LKN Foundation/James Cook University

Introduction:
Across 72 countries where lymphatic filariasis (LF) and podoconiosis are endemic, an estimated 20 million people live with lymphoedema, often without access to professional care. For many, even purchasing an extra bar of soap for hygiene can strain family finances. The Global Programme to Eliminate Lymphatic Filariasis provides guidelines for lymphoedema self-care. Numerous studies have shown that basic hygiene practices reduce infections and improve quality of life, though typically without measurable reduction in limb size. However, long-term follow-up remains a challenge, and data beyond two years are scarce.

Presentation:
We present a five-year follow-up case series from Bangladesh demonstrating measurable reduction in limb size following an enhanced self-care protocol among individuals with moderate to severe lymphoedema. Participants were supported by the National LF Elimination Programme to continue the enhanced self-care approach introduced during a 2019 randomized controlled trial.

Outcomes:
In two participants limb circumference decreased 13% and 16%. Photographic documentation vividly illustrates significant skin improvement and visible reduction in swelling in every case. Notably, one participant with bilateral lower limb lymphoedema experienced complete resolution of swelling above the knees.

Implications:
These findings demonstrate that advanced lymphoedema can improve substantially through consistent self-care alone, offering hope to communities without access to surgical or specialist care. While maintaining long-term support for advanced cases remains challenging, the results suggest that introducing self-care early—among those with very mild lymphoedema—may even reverse early tissue changes. The duration required for such reversal warrants further study. Our results underscore the urgent need to promote early self-care initiation and to develop sustainable, community-owned systems that enable long-term engagement for individuals living with lymphoedema.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 7.2

Speech Pathologists managing lymphoedema in head and neck cancer: a single group observational study

Stella Salpigtidis, Dr Jacqui Frowen, Dr Lara Edbrooke, Ellen Tomkinson

Peter MacCallum Cancer Centre

Introduction:
Head and neck lymphoedema (HNL) is a frequent complication following head and neck cancer (HNC) treatment, and its functional impact on swallow and voice can be devastating. The primary aim of this study is to assess the feasibility and acceptability of complete decongestive therapy (CDT) provided by lymphoedema-accredited speech pathologists (SPs) for patients with HNL. Secondary aims include describing changes in internal and external lymphoedema, swallow, voice and health-related quality of life (HRQoL) after three months.

Method:
This single-group observational study included patients with internal and/or external lymphoedema and swallow and/or voice dysfunction, following chemoradiotherapy for HNC. Participants received treatment consistent with CDT principles. Feasibility and acceptability were measured including recruitment, retention, adherence, resource requirements and acceptability (using Theoretical Acceptability Framework survey). Valid and reliable clinician and patient-reported measures were collected at baseline and three months. Analysis included paired t-tests and Wilcoxon Signed-Rank Tests, dependent on normality of data distributions.

Results:
Seventeen male participants (mean age = 67 years), ranging 10 weeks to 4.5 years post-treatment, were enrolled. Recruitment and retention rates were 81% (17/21) and 94% (16/17), respectively. Full adherence to the treatment regimen was 77% (13/17). Clinician resource time was >2 hours per session for assessment and treatment. Treatment acceptability was rated positively by 88% (15/17), and 94% (16/17) found attendance at SP appointments and assessments acceptable. There was statistically significant improvement (all $p<0.05$) in all measures of external and internal HNL, except for one internal subsite. Clinician-rated voice, swallow and patient-reported swallow symptoms improved (all $p<0.05$); however, voice and swallow HRQoL did not.

Conclusion:
CDT delivered by accredited SPs was feasible and acceptable, with treatment showing promising effectiveness for internal oedema and swallow/voice outcomes. Future prospective studies will address adherence, clinician time, and limitations including small, single-group, male-only samples, by incorporating larger, comparative designs.

Free Paper Session 7.3

A Multidisciplinary Approach to Lymphoedema: Developing Resources to Support the Wider Team and Promote a Common Clinical Language

Yolande Borthwick, Lorraine Brown

British Lymphology SocietyEffective lymphoedema management requires coordinated, multidisciplinary approaches across many clinical settings. The British Lymphology Society (BLS) has developed and updated a collection of multidisciplinary resources, seeking advice from specialist teams around language and terminology as well as addressing the need for a basic toolkit for any healthcare professionals.

A co-production model was used with many disciplines providing their knowledge, expertise and insight from their specific specialities

Four key collaborated resources published in the last year are highlighted

- Lymphoedema Clinical Definitions and Assessment Guide 5S
- Guidelines in the Management of Cellulitis in Lymphoedema Consensus
- The Impact of Obesity on Lymphoedema
- Lymphoedema Management in Primary Care

Outcomes:
These resources offer practical guidance for clinicians, educators, and commissioners, promoting shared language, improved pathways, and clearer clinical decision-making across the multidisciplinary team (MDT). The assessment resource enables practitioners to adopt a systematic objective pathway, aligning with recent evidence highlighting the need for standardisation in lymphoedema assessment. The cellulitis guidance ensures collaboration with medical teams in the care of lymphoedema. The primary-care guide has broadened the responsibilities and language around early detection and risk-reduction in lymphoedema, reinforcing that it is not purely specialist-driven. The obesity document has challenged assessment methods and improved awareness of weight-management vocabulary in lymphoedema care. The standardised language and terminology will assist in service audit and data-collection but also enhance research comparability.

Implication:
By embedding these resources into practice, services can strengthen collaboration, reduce variation, and enhance patient outcomes as well as become aware of the changes in approach and language when working with specific groups such as those living with obesity or experiencing cellulitis. By adopting an MDT co-production approach to documentation, we have provided standardised language, enhanced clarity for practitioners, improved readiness for data-collection and research, and reinforced the message that lymphoedema care spans the entire healthcare system.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 7.4

Raising the Standard: Evolution of Medical Referral Content to a Diagnostic Circulatory Clinic

Monika Samolyk, Martin Forbes, Katrina Lenzie-Smith,
Prof. Neil Piller

Advancing Wound Care

Introduction:
Only medical referrals are accepted for colour duplex sonography in Australia. These referrals can have heterogenous accompanying information which may lead to inconsistent diagnostic reporting and outcomes. Between October 2020 and April 2025, a vascular examinations clinic operated in regional Victoria, Australia, which accepted referrals from eight local government areas. The focus was prevention and early intervention of lower limb wounds, and lymphatic, venous and arterial disease. The primary aim of this retrospective audit was to compare the content of medical referrals to the clinic in the first 14 months, with the following 24 months. Secondary aims were to explore the differences between these two time periods.

Method:
The clinic operated on one day, every three weeks. As the vascular sonographer performed the vascular colour duplex scans, the wound consultant/lymphoedema practitioner removed bandages and dressings, assessed skin integrity and together they developed a care plan.

The audit (n=500) was conducted between 7th October and 20th December 2023. Endpoints included the descriptors used to describe chronic oedema/ lymphoedema, arterial and venous disease, wounds, and the quality and quantity of information provided in the referrals. Quantitative interim statistical analysis on demographic data was conducted using descriptive statistics. A full statistical quantitative and qualitative analysis will be presented at the meeting.

Results:
The quality of information contained in medical records demonstrated progressive improvement over time, accompanied by greater engagement form the sector. Several contributing factors were identified.

Conclusion:
Accurate medical referrals with complete histories, and relevant requests are a prerequisite to safe, accurate and effective care. Many gaps were identified in medical referrals that were subsequently addressed. Some immediate real-world practice solutions were identified that assisted clinicians to engage their medical colleagues, improve the quality of referrals and subsequent diagnostic reporting. The study identified further improvement opportunities for decision-makers and funders.

Free Paper Session 7.5

A Collaborative Approach to Cancer Care and Lymphoedema Management in the AsiaPacific Region

Liz Charlton

Positive Motion Physiotherapy and Allied Health Services.

Introduction:
Cancer is a major cause of morbidity and mortality in Pacific island nations, including Fiji. In the absence of a radiotherapy facility, cancer care in Fiji relies primarily on surgical and chemotherapy treatments. While national cancer statistics are available, there is currently no published data describing the prevalence or burden of cancer-related lymphoedema. Prior to the COVID-19 pandemic, a Memorandum of Understanding (MOU) was developed between ACT Health and the Government of Fiji to support workforce development in cancer care; however, implementation was delayed.

Presentation:
This presentation describes a multidisciplinary cancer care outreach visit to Fiji undertaken in June 2025. The visiting team comprised Canberra-based specialist cancer care nurses and an oncology- and lymphoedema-trained physiotherapist. Preparatory activities included a targeted literature review. During the visit, the team delivered education sessions to hospital-based clinicians, educational materials were distributed, and clinical observations were undertaken. Case studies and informal data collection were used to explore current practices, lymphoedema awareness, and service delivery within existing resource constraints.

Outcome:
The visit increased local clinician awareness of lymphoedema risk factors, early identification, and basic management strategies. Clinical observations and case studies suggested that lymphoedema is likely under-recognised and under-reported among individuals undergoing cancer treatment in Fiji. Key gaps were identified in workforce training, access to specialised lymphoedema services, and systematic data collection.
A preliminary report was prepared for ACT Health, reaffirming the relevance of the MOU as a framework for ongoing collaboration.

Implications:
The findings highlight the need for sustained, structured engagement to support capacity building in oncology and lymphoedema care in Fiji. Establishing feasible approaches to data collection is essential to defining lymphoedema disease burden and informing service planning. Embedding an early intervention mindset within oncology care may improve outcomes for people at risk of lymphoedema. The collaborative model described may be adaptable to other Pacific island nations, contributing to improved regional understanding and management of cancer-related lymphoedema.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 8.1

The ACHIEVE trial protocol: A phase III, multistate, randomised controlled trial evaluating the addition of exercise or compression therapy to best-practice usual breast cancer care to prevent breast cancer-related lymphoedema

Camila Sanchez Saez, Prof Sandra C Hayes, Prof Frances Boyle, Prof Boon Chua, Prof Louisa Collins, A/Prof Elizabeth Dylke, Dr Lara Edbrooke, Dr Debbie Geyer, Prof Monika Janda, A/Prof Louise Koelmeyer, Prof Alexandra L McCarthy, Dr Amanda Pigott, Prof Chris Pyke, Hildegard Reul-Hirche, A/Prof Camille Short, A/Prof Rosalind Spence, Dr Dimitrios Vagenas, Leonie Young, Dr Melanie L Plinsinga

Griffith University

Introduction:
Breast cancer-related lymphoedema (BCRL) is prevalent and associated with life-long physical, psychological and social burden, and lower quality of life. The primary aim of this trial is to determine whether, in addition to usual care, exercise therapy or compression therapy can prevent BCRL. Secondary aims assess effects on patient-reported outcomes and the cost-effectiveness of preventive strategies.

Method:
This multi-state, phase III, single-blind, parallel-group (1:1:1), randomised controlled trial will recruit adults newly diagnosed with breast cancer who are at high risk of BCRL. Participants will be randomised to usual care, usual care plus exercise therapy, usual care plus compression therapy. 660 participants are needed to detect a 10% absolute difference in 12-month BCRL incidence between groups ($\alpha=0.05$, $\beta=0.2$, 10% drop-out). BCRL incidence will be measured using bioimpedance spectroscopy, circumferences, tissue dielectric constant and validated self-report measures using predetermined diagnostic thresholds. Secondary outcomes include patient-reported outcomes (BCRL-symptoms, function, quality of life, mental health, physical activity), and intervention cost-effectiveness. Tertiary outcomes assess intervention acceptability and satisfaction (qualitative data). Usual care includes prospective surveillance (lymphoedema assessments of the upper-limb, lymphoedema education including risk reducing strategies, shoulder function rehabilitation). Exercise therapy (behaviour change counselling and individualised exercise prescription of aerobic and resistance training targeting 150 minutes per week) and compression therapy (provision of individually-fitted compression garments to be worn daily) will be delivered via fortnightly calls over 6 months. Primary and secondary outcomes will be assessed at baseline, 3-, 6-, 12-, 24-months, and 5 years post-randomisation.

Results:
Study ethics approval is under review. Study protocol will be registered on the Australian New Zealand Clinical Trial Registry (ANZCTR). Findings will be disseminated via peer-reviewed publications and national/international conferences.

Conclusion:
This trial will determine the efficacy and cost-effectiveness of integrating exercise therapy or compression therapy into best-practice usual breast cancer care for the prevention of BCRL.

Free Paper Session 8.2

Lymphatic pain in breast cancer-related lymphoedema and its impact on physical and psychosocial function

Dr Vincent Singh Paramanandam, Professor Mei Fu R., A/Prof Elizabeth Dylke

Macquarie University

Introduction:
Breast cancer-related lymphoedema (BCRL is associated with many symptoms, including pain, swelling, tightness and heaviness. Recent evidence suggests lymphatic pain, conceptualised as the coexistence of swelling and pain, is a common and distressing symptom following breast cancer treatment. However, lymphatic pain has not been widely reported in the literature. This secondary analysis of a prospective observational study validating the Breast Cancer and Lymphoedema Symptom Index (BCLE-SEI) in three Indian languages examined the prevalence of lymphatic pain and its association with physical and psychosocial distress in individuals with or at risk of BCRL.

Methods:
Women aged ≥18 years with or at risk of BCRL completed the BCLE-SEI. Participants were grouped by symptom profile: lymphatic pain, pain without swelling, swelling without pain, or no symptoms. Distress scores were derived from the BCLE-SEI impact subscale. Descriptive statistics summarised characteristics and symptom prevalence. One-way ANOVA with post-hoc tests compared distress scores across groups.

Results:
Among 350 participants (mean age 49.6 ±11.8 years), 45% reported lymphatic pain, 32% pain only, 7% swelling only, and 16% no symptoms. Groups were similar in baseline characteristics except for inter-arm impedance ratio ($p<0.001$). Physical and psychosocial distress differed significantly across groups ($p<0.001$; physical effect size=0.013, 95% CI=0.0001–0.019; psychosocial effect size=0.031, 95% CI=0.011–0.053). Post-hoc analysis showed individuals with lymphatic pain or pain reported significantly higher distress than those with swelling or no symptoms.

Conclusion:
Pain and lymphatic pain are prevalent and strongly linked to distress in individuals with or at risk of BCRL. These findings highlight the need to recognise and address pain after breast cancer treatment. Routine patient-reported pain assessment should be integrated into clinical practice to guide timely interventions.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 8.3

Viral Lymphatics: The role of social media in Lymphatic Education and Considerations for Practitioners

Gemma Spriggett

Positive Motion Rehabilitation

Introduction:

With Social Media becoming the main provider of primary education for the general population, there are limited safeguards for what information is available and the interpretation of information of the general public. The available information ranges from clinically proven, tried and true, old wives tales to truly fantastical claims that may be too good to be true.

The WHO has published a systematic review found that people feel mental, social, political and/or economic distress due to misleading and false health-related content on social media during pandemics, health emergencies.

So what are our patients exposed to, and how can we turn an Infodemic into our favour?

Presentation:

This presentation reviews and presents the most notorious claims on Social media, viral advice and whispers and rumours on support group forums in relation to Lymphoedema and Lipoedema. We will discuss common themes, interesting claims raised, odd scams, nuggets of truth and really good advice.

Outcomes:

This will be an engaging and likely humorous multimedia presentation, with review of the big Social Media platforms, Tik Tok, Instagram, X (Twitter), Facebook and Youtube, music and crowd participation, to help clinicians tap into the positive implications of social media, navigate increased anxiety and distrust, and help our patients improve their digital literacy.

Implication:

This presentation will assist therapists in helping their patients interpret the bombarding information on their screens by letting them know the most viral claims.

The presenter will even take a shot at hitting virality with responsible messaging about Lymphatic Disorders (Karaoke, Anyone?!).

Free Paper Session 8.4

Lymphedema After Gynecological Cancer Treatment: Impact on Quality of Life

Michael Roche, Fatima Khan, Tom Quach, Payton Grande, Subin Cho, Dr Rahim Nazerali, Dr Anita T Mohan

California Northstate University College Of Medicine

Introduction:

Lymphedema is a complication of gynecological cancer treatment that is often difficult to diagnose and can lead to severe consequences. If untreated, it can have a profound negative impact on a patient's quality of life (QoL). The breadth of lymphedema's impact on QoL includes negative effects on a patient's physical, emotional, psychological, social, role, financial, and sexual well-being. Despite the substantial burden that lymphedema can have on gynecological cancer patients, its impact on specific QoL domains remains inconsistently reported in the literature.

Methods:

A Systematic Review was conducted in accordance with PRISMA guidelines. Inclusion criteria consisted of clinical studies that covered gynecological cancer (uterine cervical, endometrial, ovarian, uterine, vaginal, and vulvar neoplasms), lymphedema, and quality of life from 2010-2025. Specific QoL domains explored included overall, physical, social, emotional, sexual, role, cognitive, body image, and financial. Results:

118 articles were screened, and 34 final articles were included in final review. 76% (26/34) of studies mentioned statistically significant changes in QoL following lymphedema, with 73% (19/26) detailing a negative overall impact. The most frequently reported negative impact of QoL included physical domain (69%, 18/26), followed by social (50%, 13/26), emotional (38%, 10/26), sexual (38%, 10/26), role (35%, 9/26), cognitive (31%, 8/26), body image (31%, 8/26), & financial (12%, 3/26).

Conclusion:

Lymphedema following gynecological cancer treatment can significantly worsen a patient's QoL. The physical QoL domain was most frequently affected, reflecting severe reductions in limb function and limitations to daily activities. The social QoL domain revealed reports of emotional distress, a reduced role in society, and financial difficulties. Body image was significantly impacted, leading to reduced self-esteem and sexual well-being. Together, these findings highlight the negative impact that lymphedema has on quality of life and encourage greater attention within the medical community to find new solutions for effective diagnosis and management

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 8.5

The Essential Role of Self-Care and Bandaging in Enabling Successful Surgical Intervention: A Case Study

Dr Patricia Graves, Dr Janet Douglass, Simon Chong, Diane Lacey

LKN Foundation/James Cook University

Introduction:
American Samoa is one of 72 low- and middle-income countries endemic for lymphatic filariasis (LF), a mosquito-borne disease that can lead to chronic lymphoedema and hydrocele in some individuals despite long-standing nationwide mass drug administration programmes. This case study describes an American Samoan resident with advanced filariasis-related lymphoedema who travelled to New Zealand for life-changing surgical reduction. Before surgery could proceed, substantial conservative reduction was required; however, extensive skin changes initially prevented the use of traditional multilayer bandaging. An enhanced self-care protocol—comprising meticulous skin care, deep abdominal breathing, lymphatic self-massage, and targeted exercise—was therefore implemented as the first stage of treatment.

Presentation:
The patient undertook the enhanced self-care programme for eight weeks, achieving marked improvement in skin integrity and limb condition. This enabled progression to a period of combined decongestive therapy, including therapist-delivered manual lymphatic drainage (MLD) and multilayer bandaging. With the limb sufficiently softened and reduced, surgical excision of severe filariasis-related tissue could be safely performed.

Outcomes:
The self-care phase produced substantial gains, including significant skin recovery and an estimated 7% reduction in limb volume. Subsequent MLD and multilayer bandaging further reduced limb size to the threshold required for safe and effective surgery. The combined approach demonstrates how structured self-care can create the preconditions necessary for successful specialist intervention.

Implications:
This case illustrates the pivotal role of self-care—not merely as supportive therapy, but as an essential foundation for advanced lymphoedema management, including surgery. While comprehensive specialist treatment is transformative, it remains inaccessible for most of the 16 million people living with LF-related lymphoedema across 72 endemic countries. Scaling up community-based self-care training and access to appropriate compression therapy is critical to reducing avoidable disability and improving quality of life for those affected.

Free Paper Session 9.1

Screening for Lower Limb Oedema in Older Adults: Reliability of the Pitting Test by Non-Health Professionals

Dr Jen Sanderson, Maree O'Connor, Dr Helen Badge, Professor Suzanne Kuys, Kerryn Tutt, Dr Michael Steele

Australian Catholic University

Background:
Chronic lower limb oedema is a common condition among older adults and is associated with complications such as cellulitis and chronic wounds. Early detection using the pitting test may facilitate timely management and reduce adverse outcomes. This study explored whether individuals, without a healthcare background, could accurately identify oedema in the feet and ankles of older adults after completing a brief online training program.

Methods:
A two-phase inter-rater reliability study was undertaken. In Phase 1, non-health professionals received a one-hour online training module on oedema screening and subsequently assessed older adults using the pitting oedema test at three anatomical sites: the dorsum of the foot, and areas posterior to the medial and lateral malleoli. Their assessments were compared to those of an experienced lymphoedema clinician. Based on Phase 1 findings training was refined. Phase 2 then evaluated the reliability of assessments following the updated training. Agreement between raters was measured using descriptive statistics and Cohen's Kappa, with results stratified by oedema severity and test location.

Results:
Ten female non-health professionals and 24 older adults (70.8% female) participated. In Phase 1, agreement rates ranged from 78.6% to 92.9%, while Phase 2 showed agreement between 70.0% and 90.0%. Detection accuracy was highest in Oedema extending above the ankle (100%) and lowest for absent or when oedema was present in foot one foot location (70.0%). Notably, agreement improved across all test sites after training refinement, increasing from 57.1–71.4% in Phase 1 to 90.0–96.0% in Phase 2. Kappa values ranged from –0.02 to 1.00 in Phase 1 and improved to 0.57–1.00 in Phase 2.

Conclusion:
With brief online training, non-health professionals can effectively identify lower limb oedema in older adults using the pitting test, particularly when oedema is moderate. This approach may support early detection and intervention in community settings.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 9.2

Grass roots clinical research: whole arm pitting oedema test, from genesis to structured research.

Vidarshana Satish, Dr Brenda Svensson, Dr Emma Webster,
Dr Nicola Fearn, Dr George Smith

University Of Sydney

Introduction:
Breast Cancer Related Lymphoedema (BCRL) is a significant challenge in rural and remote areas due to limited resources and access to specialist services. Early detection and intervention are essential, but there are limited low-cost and accessible measures available in rural and remote areas.

The concept of using a ribbed compression sleeve as a whole arm pitting oedema test (WArP~iT) was conceived in clinic and developed through two student research projects. The aims were to: 1. Complete a proof-of-concept study, 2. define a positive WArP~iT , 3. compare WArP~iT detection of BCRL with current lymphoedema diagnostic measures and 4. evaluate the feasibility of WArP~iT

Methods:
Initial proof-of-concept was established in five lived experience volunteers. A proposed WArP~iT was interlimb visual differences following bilateral sleeve application. Women with breast cancer (BC) and healthy controls underwent Bioimpedance spectroscopy (BIS), arm circumference (AC), pinch test (PT), moisture metre (MM) and WArP~iT. Assessors were not blinded while defining WArP~iT features. T-tests were used to compare group characteristics. Fisher's Exact and agreement metrics were calculated to compare detection rates.

Results:
Twelve BC (four with BCRL diagnosis) and eight controls participated. There were no significant differences in age or BMI between groups. WArP~iT was defined as the presence of visible/palpable skin corrugations 5 minutes after sleeve removal. No visible/palpable corrugations were observed in controls or unaffected arms. WArP~iT correctly detected the four BCRL cases in the BC group, nil in controls. Agreement between WArP~iT was BIS 90%, AC 75%, PT 85% and MM 45%. No adverse events were reported.

Discussion:
Successful proof-of-concept supports further investigation. A WArP~iT BCRL detection was defined. Preliminary findings show promising WArP~iT BCRL detection rates compared with validated lymphoedema measures. MM sites will be modified in the research protocol. We recommend continuing recruitment to undertake blinded testing and investigate sensitivity and specificity.

Free Paper Session 9.3

Whole arm pitting oedema test: low-tech detection of breast cancer related lymphoedema

Dr Brenda Svensson, Vidarshana Satish, Dr Emma Webster,
Dr Nicola Fearn, Dr George Smith

Dubbo Health Service

Introduction:
The best outcomes for breast cancer related lymphoedema (BCRL) are achieved when its detected early. But how can BCRL be detected early if there are no lymphoedema services, trained lymphoedema therapists or access to BCRL detection equipment? Detection is particularly challenging in rural and remote areas.

Pitting oedema is a known characteristic of BCRL that could be exploited to detect BCRL. This study investigated a commercially available ribbed compression sleeve used as a proxy for a whole arm pitting oedema test (WArP~iT). The sleeve applies positive pressure over the arm from wrist to axilla. We hypothesised that indentations/corrugations left on arm after wearing the ribbed sleeve could indicate BCRL.

Method:
Ninety women with unilateral breast cancer (with and without BCRL) and 10 healthy controls will be recruited and undergo lymphoedema assessments: bioimpedance spectroscopy (BIS), circumference measurements, tissue dielectric constant, physical assessment (PT) and WArP~iT.

For WArP~iT, participants wore a ribbed compression sleeve on both arms for ten minutes. The sleeves were removed and arms inspected for visible/palpable corrugations immediately after and five minutes post sleeve removal, if present this was a positive WArP~iT. Kappa coefficient and positive and negative predictive values were calculated to determine concurrent validity.

Results:
Data from 26 women with breast cancer and 9 healthy controls has been collected. Interim analysis showed WArP~iT had 91% agreement with BIS (substantial agreement $k=0.62$, $p<0.001$) and 88% (moderate agreement $k=0.44$, $p=0.007$) with PT at the proximal forearm. There were no positive WArP~iT in healthy controls. Final results will be presented at the conference.

Conclusion:
The WArP~iT may be an effective, affordable way to detect BCRL. Using the WArP~iT as an assessment for BCRL could enable BCRL detection by sole lymphoedema practitioners, generalist allied health clinicians and potentially offer in-home detection when mailed to people in rural and remote areas.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 9.4

Perceptions of limb volume change

Beth Murray

Royal Prince Alfred Hospital

Introduction:
Patient perception of limb volume change is commonly utilised as an informal assessment method to evaluate effectiveness of intervention strategies. The aim of this study is to identify whether perceptions patients have of their limb volume are accurate when compared with results collected by standardised method of measurement. The outcomes of this study aim to guide practice in oedema assessment. Secondary research questions this study aims to answer include:

- Are patients accurate in their perception of limb volume change?
- Does reliability increase with the magnitude of change?
- Does reliability increase if the duration of time between visits is less?
- Are our patients generally increasing or decreasing between appointments?
- Is the likelihood of an increase less if the time between visits is less?

Methods:
The sample comprised the first 100 patients seen for review from the time of commencement of the study across two lymphoedema clinics collocated with public hospitals. Patients included had to be attending for review, not initial assessment. At appointment, patients were asked whether they believed their limb/s had increased, decreased or been stable in size since their previous appointment. Their responses were documented and analysed against circumferential measurement of their limb size.

Results: The findings suggest self-reported perception alone provides unreliable indication of true directional change. Patients struggle most with perceiving early or moderate change. Overall, patients correctly identified the direction of change in 50.5% of cases, indicating that perceptual accuracy is essentially equivalent to chance. There was no clear relationship between shorter follow-up and improved perceptual reliability. Limbs are more likely to decrease than increase between clinical visits. Limbs reviewed > six months were over twice as likely to show increase in swelling.

Conclusion:
Objective measures of limb volume are required for accurate clinical assessment of lymphoedema.

Free Paper Session 9.5

Prevalence of head and neck lymphoedema on CT following head and neck cancer treatment

Edmund Chan, Dr Kevin Nguyen, Dr Tian Gao, Dr Dimindu Weerakkody, Dr Eddie Lau, A/Prof Richard Khor, Dr Sally Ng

Austin Health, University of Melbourne, Olivia Newton John Cancer Centre

Purpose:
To evaluate the prevalence and severity of head and neck lymphoedema (HNL) on CT following radiotherapy (RT) and/or surgery for treatment of head and neck cancer (HNC). Methods and Materials:

A retrospective analysis of CT studies performed on 226 patients who underwent RT and/or surgery between 2019 and 2024. CT's were evaluated using the CT lymphoedema assessment tool (CT-LEFAT), which grades fat stranding and epiglottic/prevertebral soft tissue thickness on neck CT. CT studies were assessed at baseline, 3 months and 6 months following completion of treatment.

Results:
Subgroup analysis was performed for patients who underwent definitive RT (n=105), post-operative RT (PORT) (n=44), and neck dissection (ND) plus PORT (n=77). Statistically significant increases in mean epiglottic and prevertebral soft tissue thickness at 3 months for all groups ($p<0.003$ for PORT, $p<0.001$ for others) was observed. Although a slight decrease in mean thickness was observed at 6 months, thickness did not return to baseline levels. External HNL was more severe in patients who underwent ND and PORT: 61% (47/77) had advanced changes at 3 months, and 53% (10/19) had advanced changes at 6 months. In the PORT group, 72% (31/43) had mild changes on CT at 3 months, and 67% (6/9) had mild changes at 6 months. This result was comparable to the definitive RT group, where 63% (67/106) had mild changes at 3 months and 70% (26/37) had mild changes at 6 months.

Conclusion:
CT changes suggestive of HNL are common in the early post-treatment period for HNC, with more advanced changes seen in patients undergoing ND with PORT. Whilst further studies are required to correlate CT findings with clinical assessment, radiologists should be aware of changes that may have significant functional implications on HNC patients.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 10.1

Is it really a venous leg ulcer?

Monika Samolyk, Martin Forbes, Katrina Lenzie-Smith,
Prof. Neil Piller

Advancing Wound Care

Introduction:
Between October 2020 and April 2025, a vascular examinations clinic operated, in regional Victoria, Australia. The focus was prevention and early intervention of lower limb wounds, and circulatory disease. The primary aim of this retrospective clinical audit was to identify the association between chronic oedema/ lymphoedema, the presence of thrombotic disease and if wounds in the malleolar/gaiter region were drained by incompetent veins. A secondary aim was to identify the location of these wounds in the malleolar/gaiter region.

Method:
The clinic operated on one day, every three weeks. As the vascular sonographer performed the vascular colour duplex scans, the wound consultant removed bandages and dressings, assessed skin integrity and together they developed a plan of care. The audit (n=500) was conducted between 7th October and 20th December 2023. Endpoints included presence of venous disease, chronic oedema /lymphoedema and at least one lower limb wound. Interim statistical analysis on demographic data was conducted using descriptive statistics. All other data were analysed by chi square test. A full statistical analysis will be presented at the meeting.

Results:
Statistically significant associations were identified between chronic oedema/lymphoedema and wounding, and when wounds were drained by incompetent veins or were post thrombotic. No statistical significance was found between wounds in the malleolar/ gaiter region and chronic venous insufficiency in other veins, that were not draining the wound. Clinical practice gaps were identified in venous assessment, in the background of chronic oedema/ lymphoedema.

Conclusion:
If wound aetiology is identified as venous, especially in the presence of chronic oedema/lymphoedema, quantitative data enhances accurate diagnosis. Colour duplex sonography combined with a comprehensive lymphatic assessment, provides an accurate diagnosis for treatment and life-changing patient outcomes.

Free Paper Session 10.2

Is it safe to compress?

Monika Samolyk, Martin Forbes, Katrina Lenzi-Smith,
Prof. Neil Piller

Advancing Wound Care

Introduction:
Between October 2020 and April 2025, a vascular examinations clinic operated, in regional Victoria, Australia. The focus was prevention and early intervention of lower limb wounds, and circulatory disease. The primary aim of this retrospective clinical audit was to evaluate the relationship between chronic oedema/ lymphoedema, peripheral arterial disease and the criteria applied to establish absolute contraindications for graduated compression. A secondary aim was to compare clinicians' suspicion of peripheral arterial disease with its confirmed presence.

Method:
The clinic operated on one day, every three weeks. As the vascular sonographer performed the vascular colour duplex scans, the wound consultant removed bandages and dressings, assessed skin integrity and together they developed a plan of care. The audit (n=500) was conducted between 7th October and 20th December 2023. Study endpoints included presence of peripheral arterial disease and chronic oedema /lymphoedema, in addition to the level and extent of peripheral arterial disease reported on the medical referrals and confirmed on colour duplex ultrasound. Interim statistical analysis on demographic data was conducted using descriptive statistics. All other data were analysed by chi square test. A full statistical analysis will be presented at the meeting.

Results:
Statistically significant associations were identified between chronic oedema/lymphoedema and peripheral arterial disease. Graduated compression was absolutely contraindicated in a small but high-risk population. Gaps in clinical practice were identified in the assessment of peripheral arterial disease, particularly in the utilisation and interpretation of non-invasive modalities other than colour duplex ultrasound.

Conclusion:
Assessment of the lower limb arteries with non-invasive testing can be complicated by false positives and negatives. This error rate increases in the presence of coexisting chronic/oedema resulting in patients being denied compression, and in the less frequent scenarios, where compression is applied and causes harm. Best practice non-invasive diagnostics with colour duplex ultrasound are essential, to support safe and effective, diagnosis and treatment.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 10.3

Medication induced wound case study

Dr Sylvia McAra

Leg and Foot Care

Introduction:
This case describes a 75-yr old male, prescribed Hydrea for essential thrombocyptopenia (ET), who experienced bilateral chronic lower limb oedema and a unilateral lower limb wound for nine months.

Presentation:
This patient was referred for podiatry assessment by his GP for a left gaiter area wound of five months duration, with features considered to be typical of a venous leg ulcer.

The patient was an active retiree, a non-smoker, with controlled hypertension and essential thrombocytopenia (ET). He presented with bilateral lower leg and foot oedema and a longstanding large varicose vein in the left thigh. The oedema was more pronounced in the left limb (International Lymphoedema Society [ISL] stage 1 bilaterally).

Despite evidence-informed wound care and management of the oedema with wraps and flat knit stockings, the wound persisted, with intermittent, inflammatory exacerbations of the wound and periwound.

Subsequent vascular specialist referral and colour duplex venous ultrasound identified an incompetent thigh vein. Vein surgery was performed and thigh-length stockings were used, but the wound failed to heal.

Medications were reviewed, and it was identified that the hydroxycarbamide/hydroxyurea (Hydrea) which was prescribed for ET has a known side effect profile that includes lower limb oedema, associated inflammation, and an association with chronic wounds.

Outcomes:
Following the discontinuation of Hydrea and the use of an alternative medication, the patient's oedema and inflammation resolved, and the wound healed within 4 weeks. Implications:

This chronic lower leg wound was assumed to have typical phlebo/lymphatic etiology by several medical and allied health practitioners. The healing of the wound occurred only after the medication was withdrawn. It proved to be an atypical wound, where the inflammatory side effects of this medication and the associated oedema were the pivotal etiological factors.

Free Paper Session 10.4

Oedema in the foot in primary lymphoedema: A review

Dr Jane Phillips

Paediatric And Primary Lymphoedema

Introduction:
Primary lymphoedema (PL) presents more commonly in the lower limb than the upper, affecting one or more segments from the foot to the pelvis. In children presenting with PL, the foot alone may be affected and in adults, gravity causes the foot to become more involved over time, leading to skin thickening, skin changes and potentially affecting gait.

Specific lymphatic anomalies have been associated with different phenotypes of primary lymphoedema, raising the possibility of targeted treatment. Yet how do we image, measure and manage primary lymphoedema in the foot: what compression is best applied and how do we monitor the outcomes of that compression? What do we know about the movement of fluid in the foot in response to compression?

This presentation will review recent publications on ICG imaging in PL. Management of the foot in primary lymphoedema will be explored, in the context of a study of fluid distribution in PL in which the response to compression in the foot will be reviewed, raising challenges to our management of oedema in the foot in both adults and children.

Methods and results:
Measures of fluid (percent water content, bioimpedance and ultrasound) were compared in 32 people (16 with and 16 without PL), with measures being taken in the leg and foot before and after one standardized application of pneumatic compression. There was no change in any measure of fluid in the foot of either group.

Conclusions:
Accurate phenotyping of primary lymphoedema in both assessment and imaging is needed to understand targeted treatment for primary lymphoedema. Further research is needed to investigate the effect of compression on drainage from the foot in primary lymphoedema.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 11.1

Liposuction for lymphoedema in Australia, 10 years on

A/Prof Thomas Lam, A/Prof Helen Mackie, Katrina Gaitatzis, Kim Toyer, A/Prof Louise Koelmeyer

Macquarie University Hospital

Background:
Liposuction for International Society of Lymphology late stage II or III limb lymphoedema is an established surgical option to remove excessive adipose tissue. It has been performed at the Macquarie University Hospital since 2012.

Objectives:
To describe long-term outcomes following suction-assisted lipectomy using the Brorson Protocol, including limb volume reduction and change in L-Dex.

Methods:
Prospectively collected data from patients undergoing liposuction surgery for primary or secondary lymphoedema, between May 2012 and May 2022 were analysed. Limb volume and L-Dex were measured pre-operatively, and at 6-months, 12-months, 5-years and 10-years. Results are expressed as percentage limb-volume reduction relative to the contralateral (unaffected) limb, and change in L-dex. Descriptive statistics were used and reported for upper- and lower-limbs cohorts.

Results:
For upper-limb lymphoedema (mean age 60.7 ± 10.9 years, BMI 29.6 ± 4.4), mean pre-operative volume difference was 40.0% ± 15.2 (n=90). Following liposuction, percentage reduction reached 99.5% ± 27.7 at 6-months (n=86) and 108.2% ± 26.0 at 12-months (n=78), with stability at 5-years (98.7% ± 19.4, n=9) and 10-years (128.2% ± 28.3, n=3). L-Dex decreased from 44.0 ± 22.3 pre-operatively (n=84) to 20.0 ± 7.8 at 5-years (n=9) and 12.6 ± 8.8 at 10-years (n=3). For lower-limb lymphoedema (mean age 52.9 ± 14.9 years, BMI 28.2 ± 6.1), pre-operative volume difference was 41.7% ± 24.7 (n=81). Percentage reduction reached 85.0% ± 28.9 at 6-months (n=75) and 86.7% ± 40.8 at 12-months (n=76), maintained at 5-years (92.4 ± 20.0, n=19) and 10-years (91.2% ± 13.4, n=5). L-Dex decreased from 42.2 ± 25.3 pre-operatively (n=81) to 37.7 ± 27.1 at 12-months (n=66) and 19.9 ± 4.1 at 10-years (n=5).

Conclusion:
Suction-assisted lipectomy achieves sustained limb-volume and L-Dex reductions, with stability beyond 10-years. These results represent the largest and longest Australian liposuction dataset as a treatment option for advanced lymphoedema.

Free Paper Session 11.2

Prophylactic immediate lymphatic reconstruction in breast cancer patients undergoing axillary dissection

Dr Edmond Chang, Dr Sally Ng, Dr Cody Gu, Taylor Marcus, Derek Neoh, Julian Liew, Natasha Van Zyl, Dr Kim Hughes

Austin Health

Introduction:
Immediate lymphatic reconstruction (ILR) is a microsurgical technique where lymphatic channels are reconnected at the time of lymph node dissection to reduce the risk of developing lymphoedema. Since its initial description in 2011 by Boccardo et al., there has been good evidence for its efficacy in reducing the risk of breast cancer related lymphoedema (BCRL) post axillary dissection (AD). We describe a single-centre experience with ILR in breast cancer patients undergoing AD.

Methods:
Patients undergoing AD for breast cancer at the study centre were assessed preoperatively for suitability for ILR. Upper limb lymphatics that may be sacrificed in the AD were visualised with fluoresceine or indocyanine green. For patients where a suitable channel was identified, ILR was performed at the time of AD. Follow up included 3-monthly reviews with LYMQOL surveys, limb circumference measurements, bioimpedance spectroscopy, and localised percentage water content (LymphScanner). Patient symptoms, increases in limb circumference, and L-Dex rises triggered clinical review and referral to early compression and physiotherapy.

Results:
23 cases of ILR were performed at the study centre between November 2022 and November 2025. Excluding 3 patients lost to follow-up and 1 patient with local cancer recurrence, 18 patients attended a total of 58 reviews. Early BCRL developed in 2 patients (11%) who were referred to physiotherapy and compression therapy with stable symptoms since.

Conclusion:
The rate of BCRL after ILR at this study centre support the existing evidence that ILR is effective at reducing the rate of BCRL in breast cancer patients post AD. Regular reviews utilising LYMQOL, limb circumference measurements, bioimpedance spectroscopy, and LymphScanner technologies also appears promising for early detection and timely intervention in BCRL.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 11.3

Evaluation of longterm outcomes of Lymphovenous Anastamosis (LVA) microsurgery using a standardized surgical and assessment protocol.

Susan (Sue) Ryan, Dr Vincent Singh Paramanandam, Dr Quan Ngo, Asha Heydon-White, Kim Toyer, Brenda Gutierrez

Australian Lymphoedema Education, Research and Treatment Centre (ALERT)

Introduction:
Lymphovenous Anastomosis (LVA) microsurgery is a minimally invasive technique used to treat early-stage limb lymphoedema, involving superfine microsurgical anastomosis of patent superficial lymphatic vessels (>0.8 mm in diameter) to adjacent veins. Despite its growing use, surgical outcome remains challenging and complex to assess. This study aims to evaluate the long-term outcomes of LVA using a standardized surgical and assessment protocol from a tertiary lymphoedema clinic and research centre.

Methods:
A prospective cohort study was conducted on individuals who underwent LVA between 2016 and 2025. All surgeries followed a strict protocol, with assessments conducted at baseline (before optimisation), pre-operatively, and at 6 months, 1 year, 18 months, and 2 years post-surgery. The lymphoedema index (L-Dex), percentage volume difference findings were extracted from the RedCap database. The patient characteristics were analysed using descriptive statistics, L-Dex and the percentage volume differences were analysed using the Generalised Estimation Equations (GEE).

Results:
Thirty-one participants with a mean age of 54.6 (13.2) were included irrespective of whether lower limb (n =19) or upper limb lymphoedema (n = 12). The mean duration of lymphoedema was 8.1 (9.5) years. Participants were predominantly female (n = 22). The L-Dex and the percentage volume differences were maintained throughout the follow-up. The coefficients for the L-Dex and the percentage volume differences ranged from -9 to -2.9 for the visits, with none reaching statistical significance (p>0.05), indicating that the differences were maintained throughout the follow-up. The Wald chi-square ranged from 0.4 to 1.7. There were no interaction between the visits and the lymphoedema groups (lower-vs upper-limb).

Conclusions:
This study showed that the individuals who have undergone LVA for lymphoedema, a chronic progressive condition, maintained their objective outcomes for two years. Further analysis of changes in lymphatic mapping and drainage patterns, and compression garment compliance and class would add value.

Free Paper Session 11.4

8-year experience in surgical management of scrotal lymphoedema

Dr Quan Ngo

Australian Lymphoedema Education Research and Treatment centre

Introduction:
Scrotal lymphoedema is a chronic, debilitating condition resulting from impaired lymphatic drainage. Causes may include infection, trauma, massive weight gain, oncological treatments, and idiopathic origins. It significantly impacts quality of life due to physical discomfort, hygiene difficulty, sexual dysfunction, psychosocial distress, and recurrent infection. Conservative lymphoedema management—such as manual drainage and compression—is often ineffective due to anatomical constraints. Consequently, excisional surgery remains the primary and often only viable treatment.

Presentation:
We present an eight-year review of surgical management of scrotal lymphoedema, outlining patient characteristics, causal factors, and presenting symptoms. Operative technique, perioperative care, and postoperative outcomes are described. Complications—including infection, haematoma, skin loss, wound breakdown, and return to theatre—are analysed. Recurrence, revision rates, and patient satisfaction are reported.

Outcomes:
From 2016–2024, 11 patients underwent surgical treatment for scrotal or penoscrotal lymphoedema. Aetiologies included congenital cases, idiopathic disease, obesity-related lymphoedema, and infective causes. All patients reported subjective improvement in function and quality of life. Five patients had multiple operations. A learning curve was identified regarding surgical technique, complication mitigation, and recurrence management.

Implications:
Despite its rarity, scrotal lymphoedema presents unique diagnostic and therapeutic challenges distinct from other forms of lymphoedema. This review clarifies the role and limitations of debulking surgery, providing clinicians and therapists with realistic expectations of outcomes and recurrence risk. These insights may guide patient counselling and informed decision-making in multidisciplinary care settings.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Free Paper Session 11.5

Case studies evaluating outcomes of vascularised lymph node transfer using Indocyanine green (ICG) lymphography

Asha Heydon-white, Dr Quan Ngo, A/Prof Hrioo Suami, Sue Ryan, Brenda Gutierrez, Katie Banning, Dr Vincent Singh Paramanandam

Australian Lymphoedema Education, Research and Treatment Centre (ALERT), Macquarie University

Introduction:
Indocyanine green (ICG) lymphography is a lymphatic imaging technique that enables dynamic real-time visualisation of the superficial lymphatic vasculature. Its repeatability and sensitivity to morphological changes make it a valuable tool in the diagnosis and assessment of lymphoedema. Beyond pre-operative assessment to determine surgical eligibility, ICG lymphography holds promise for evaluating post-surgical outcomes, particularly following vascularised lymph node transfer (VLNT).

Presentation:
This presentation will explore a series of case studies involving individuals with lymphoedema who have undergone VLNT, with or without adjunct lymphovenous anastomosis (LVA). Each case will include a comprehensive review of pre-operative eligibility criteria, surgical decision-making, and longitudinal follow-up data. Objective outcome measures will be discussed, including limb volume differences, bioimpedance spectroscopy results, and ICG lymphography findings at regular post-operative intervals.

Outcomes:
Through these case studies, we aim to highlight the utility of ICG lymphography in evaluating VLNT surgical outcomes. Clinicians will gain a deeper understanding of VLNT eligibility criteria and the practical application of ICG lymphography in assessing VLNT outcomes.

Implication:
ICG lymphography offers a method for evaluating morphological changes in lymphatic vasculature following VLNT surgery. Its integration into clinical practice may enhance decision-making around surgical eligiblity, improve outcome monitoring, and support long-term management strategies for individual undergoing VLNT surgery.

Poster P1

Early clinician experience of expanding head and neck lymphoedema compression options

Dr Amanda Pigott, Dr Megan Trevethan

ALA Scientific Convening Conference Committee

Introduction:
Rates of HNL (head and neck lymphoedema) are increasing as recognition of the condition expands. Although research is still evolving to support evidence-based treatment modalities, the use of compression is supported by available guidelines. Available compression devices have been very limited in their range in Australia. The expansion of this market over the past 12 months presents new clinical reasoning challenges. Which compression device is suitable for which patient?

Presentation:
Successful compression prescription for head and neck lymphoedema is challenged by the variation in anatomical structure, the co-location of cancer treatments and the location of oedema relative to other vital structures. Clinical case examples will be provided describing the use of current and emerging compression devices for different lymphoedema presentations. Identified clinical features of lymphoedema will be associated with favourable compression garment features to provide examples of application in practice.

Outcomes:
This poster will present a range of available head and neck lymphoedema compression garments and propose clinical indicators for their use.

Implication:
As the range of head and neck compression devices available in Australia increases, lymphoedema therapists should consider the degree and location of oedema present, anatomical features of the individual, and tailor compression prescription to this presentation.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Poster P2

A year of progress for a person with lymphoedema of their leg

Kim Toyer

ALERT – Mqhealth Lymphoedema Clinic – Macquarie University

Introduction:
Navigating the Australian healthcare system for leg lymphoedema support is particularly challenging for individuals without strong motivation, medical literacy, or financial resources. KG, a young man with primary lymphoedema, faced significant barriers in accessing timely diagnosis and effective therapy. Strategic planning and advocacy were essential to meet his complex needs while minimising financial burden.

Presentation:
KG experienced progressive swelling in his right lower leg from adolescence, with no diagnosis or effective management offered over six years despite consulting multiple GPs. A vascular specialist in the public system eventually diagnosed lymphoedema and referred him to our private multidisciplinary clinic. As a full-time worker supporting his family, KG had limited time and financial capacity for intensive therapy, requiring careful sequencing of care.

Outcomes:
Between June and September 2025, KG achieved notable improvements:

- Enhanced gait and standing tolerance for work
- Return to usual pant sizing
- Transition from self-sourced socks to custom garments via industry advocacy
- L-Dex reduction from 100.0 to 94.7
- Total limb volume reduced from 106.5% (9.85 L) to 66.7% (6.11 L)
- Below-knee volume reduced from 256.7% (8.92 L) to 147.2% (5.13 L)
- Gained awareness of Medicare Chronic Disease Management plans and Enable Healthshare garment funding

Funding was also requested for ICG lymphography to confirm diagnosis and guide personalised conservative care.

Implications:
This case highlights the diagnostic delays and financial barriers faced by Australians with primary lymphoedema. It underscores the vital role of lymphoedema therapists in facilitating access to care through advocacy and funding programs, and the importance of tailored, flexible therapy strategies for younger patients with complex needs.

Poster P3

A year of progress for a person with lymphoedema of their leg

Kim Toyer

ALERT – Mqhealth Lymphoedema Clinic – Macquarie University

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- Below-knee volume reduced from 257% (8.9 L) to 147% (5.1 L)
- Gained awareness of Medicare Chronic Disease Management plans and Enable Healthshare garment funding for custom garments

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Implications:
This case highlights the diagnostic delays and financial barriers faced by Australians with primary lymphoedema. It underscores the vital role of lymphoedema therapists in facilitating access to care through advocacy and funding programs, and the importance of tailored, flexible therapy strategies for younger patients with complex needs.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Poster P4

Risk Factors for Lymphoedema After Gynecological Cancer Treatment

Michael Roche, Fatima Khan, Tom Quach, Payton Grande, Subin Cho, Dr Rahim Nazerali, Dr Anita T Mohan

California Northstate University College Of Medicine

Introduction:
Lymphoedema is a chronic complication of gynecological cancer treatment that can lead to severe lifelong consequences and have a profound negative impact on a patient's quality of life (QoL). With advancements in gynecological cancer treatment resulting in improved patient survival, it is important to reduce the risk for complications such as Lymphoedema that lead to significant long-term morbidity. Despite the substantial burden that Lymphoedema can have on gynecological cancer patients, its risk factors remain inconsistently reported in the literature.

Methods:
A Systematic Review was conducted in accordance with PRISMA guidelines. Databases utilized include MEDLINE, Embase, and Cochrane. Inclusion criteria consisted of clinical studies that covered gynecological cancer (uterine cervical, endometrial, ovarian, uterine, vaginal, and vulvar neoplasms) and Lymphoedema from 2010-2025. Specific Lymphoedema risk factors explored include extent of surgery, number and anatomic site of LN removal, type of LN assessment, adjuvant therapy, and BMI, among others.

Results:
427 articles were screened, and 49 articles were included. The most frequently reported Lymphoedema risk factor was adjuvant chemoradiation (53.06%), followed by lymphadenectomy (38.78%), increased LN removal (36.73%), obesity (26.53%), circumflex iliac or suprafemoral LN dissection (22.45%), and extent of surgery (12.24%). Other Lymphoedema risk factors reported include comorbidities, positive LN, inactivity, adenocarcinoma, and diabetes mellitus.

Conclusion:
Understanding the risk factors for Lymphoedema following gynecological cancer treatment is important for reducing its incidence, limiting long-term morbidity, and improving patient outcomes. The most frequently reported Lymphoedema risk factor was adjuvant chemoradiation, likely due to radiotherapy-induced fibrosis. Lymphadenectomy is another key Lymphoedema risk factor, with sentinel lymph node biopsy being a promising alternative. Increased LN removal (15-30+) is also strongly associated with Lymphoedema. These findings highlight the key risk factors for Lymphoedema following gynecological cancer treatment, and encourage the medical community to find new solutions to limit its incidence and improve patient QoL.

Poster P5

Embedding a lymphoedema physiotherapist into an interdisciplinary high-risk foot team

Louise Humphrey, Anthea Pickett

Albury Wodonga Health

Introduction:
Chronic oedema is a common yet under-recognised contributing factor to delayed wound healing in people with diabetes-related foot disease (DFD). Within a regional interdisciplinary high-risk foot (HRF) clinic, clinical observation highlighted that a substantial proportion of patients presented with persistent lower-limb oedema suspected to be a barrier to wound healing and increasing one's infection risk, hospitalisation rates and likelihood of amputation while significantly reducing quality of life. These individuals often experience socioeconomic disadvantage, low health literacy, multimorbidity and high psychosocial burden—factors that limit their ability to access traditional lymphoedema services.

Presentation:
To address this unmet need, a lymphoedema (LO) physiotherapist who was part of the vascular team was embedded within the vascular HRF multidisciplinary team (MDT). This model enabled timely, co-located assessment and the safe initiation of compression therapy informed by podiatric and vascular surgical review. The LO physiotherapist contributed to individualised care planning, patient education, and the prescription of appropriate compression therapy. Staff education on oedema management and safe compression use improved awareness. A case study will be presented.

Outcomes:
Integrating LO expertise streamlined patient flow, reduced delays associated with external referrals and improved continuity of care. Timely oedema management facilitated improved wound progression, reduced risk of infection and improved quality of life. The MDT reported greater confidence in implementing compression therapy in complex vascular patients, while patients benefited from fewer appointments, reduced travel burden and improved self-management capacity.

Implications:
Embedding a lymphoedema physiotherapist within a high-risk foot MDT offers a patient centred, cost-effective model that addresses a previously unmet clinical need. This approach enhances wound healing potential, reduces avoidable hospital presentations and supports equitable access to essential care for a highly vulnerable population. The model provides a framework for other regional and metropolitan vascular services aiming to improve outcomes for patients with DFD and chronic oedema

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Poster P6

It takes a team! Liaising with community nurses and support staff to assist with reduction of complex bilateral lower leg lymphoedema utilising the Mobiderm® bandaging and product range.

Sarah Gill

Sense Of Still

Introduction:

Female client, 76 y.o., complex bilateral lower leg lymphoedema, morbid obesity, recently hospitalised for cellulitis. Left calf was 79cm at the largest circumference point, right calf 78cm. Severe skin changes including hyperkeratosis, papillomata and exudate were present. Client needed hospitalisation for reduction of limbs, but these services are unavailable in Regional Victoria.

As a private practitioner my appointment availability is limited. Also, the patient had insufficient funds to meet the cost of private treatment. So, to reach the optimal intensity of this client's care, I formed a collaboration between the client, myself, community nursing staff and the support-at-home package facilitator.

Method:

The Mobiderm® range of bandages and garments was used. I provided the community nursing staff with a one-page weekly treatment protocol. The protocol included pictures, application guide and clear instructions to staff and client of treatment timeline.

A 3-phase plan was used:

Phase 1 (2 weeks):

- Intensive reduction with Mobiderm® Bandaging.
- Myself and community nurses only.
- Phase 2 (8 weeks):
- Reduction and management, alternating Mobiderm® Bandaging and Autofit sock.
- Myself, community nurses and personal care assistants (PCA).
- Phase 3 (12 weeks):
- 3 x weekly application of Mobiderm® Autofit sock, Biflex self-adjust wrap system alternating between legs.
- PCAs only.
- The rest of the week, client self-managed with combination of compression socks, Mobiderm® Autofit socks and Biflex self-adjust wrap system.

Results:

Over a 16-month period the client had 6.9 L (6858ml) reduction from left lower leg and 6.6 L (6573 ml) from right lower leg with no further cellulitis.

Conclusion:

Without Mobiderm® bandages and products this client would not have received consistent care of such intensity. Education and uptake of Mobiderm® use by client's community nurses and carers was swift and uncomplicated. The client therefore received vital care at home.

Poster P7

The leaky leg team: rural innovation in oedema and wound care

Monique Coleman, Stacey Gillingham

Swan Hill District Health

Introduction:

Lower limb wounds, chronic oedema and complex lymphoedema present significant challenges for people living in rural and remote regions, where access to specialist services is limited. This frequently results in delayed diagnosis, fragmented care and preventable complications such as recurrent cellulitis and chronic wounds. This presentation aims to outline the establishment of a multidisciplinary lower limb oedema clinic and examine its impact on patient experience and clinical outcomes in a rural health setting.

Presentation:

A multidisciplinary lower limb oedema clinic was established to address service gaps across a geographically dispersed rural catchment. Evidence-based management underpins all interventions, including compression therapy, wound management and patient education. The model prioritises thorough assessment, extended consultation time, collaborative decision-making to support people with complex and unstable presentations, and streamlined referral pathways, including timely escalation to specialist services when required. I will demonstrate how the clinic supports individuals who previously experienced inconsistent care and limited access to specialist services.

Outcomes:

Early outcomes include more than 12 months without hospital admission for several patients with a history of recurrent cellulitis. Improvements in wound healing, limb volume and patient self-management have been observed. The clinic has improved access for people from remote and cross-border regions and has strengthened interdisciplinary confidence and uptake of evidence-based practice, replacing inconsistent or improvised approaches.

Implication:

This service demonstrates a flexible and structured model of rural care that integrates evidence-based lymphatic and wound management, extended consultation capacity and collaborative practice within a formal referral framework. Consistent use of validated outcome measures supports ongoing monitoring across the patient care pathway. This model highlights how locally adapted service innovation can improve outcomes for people with complex lower limb conditions and offers a replicable approach for other underserved regions

CONCURRENT PAPERS & FREE PAPER SESSIONS

Poster P8

Simplifying Complex Feet, 'There is a way forward'- Case studies, presenting treatment options and confident garment fitting for better patient outcomes.

Helen Smenda

Camberwell Lymphoedema Clinic

Introduction:
This poster presents three complex foot oedema case studies from within a private clinical setting with successful patient outcomes. This poster aims to provide therapists with practical solutions to manage complex shaped feet. And the ability to devise a creative treatment plan to manage oedema and measure with confidence for well-fitting garments.

Presentation:
A healthy range of motion in feet is vital for mobilisation and the three case studies which are presented, all have significant mobility issues. Each case study had unique treatment challenges.

Outcomes:
The management of these complex cases called for creative oedema reduction choices and excellence in custom garment making. One case study included a team approach. Managing complex feet is often daunting and many therapists struggle with confidence to manage treatment goals and select appropriate compression garments. Successful garments must include careful measurements but also consideration of the density and 'landscape' of the tissues.

Implications:
Reduction of oedema and improving skin health with a successfully fitted garment results in successful patient outcomes. These outcomes include an improvement in foot, ankle, and lower leg function. The challenge is to increase the degree of dorsal flexion and extension, paramount to achieving a sufficient calf muscle pump action. By reinforcing foot function, gait and posture is also strengthened and therefore the patient is more confident to mobilise. Hence, there is a better way forward for your patients.

Poster P9

Adjunctive gentle differential-pressure support in complex lower-limb trauma when compression is poorly tolerated: a clinical case study

Cheryl Pollock

ChezLeon Australia Pty Ltd, Australia

Introduction:
Severe lower-limb trauma requiring complex reconstruction presents significant challenges for oedema management. While compression therapy is routinely prescribed, pain, surgical hardware, wound burden, and altered limb architecture may render standard compression impractical or poorly tolerated. In such circumstances, clinicians must consider safe, ethical adjunctive approaches to support interstitial and lymphatic fluid movement when first-line interventions are temporarily inaccessible.

Presentation:
A male patient sustained severe bilateral lower-limb trauma with partial amputation and staged reconstruction, including internal fixation followed by external fixation. Standard post-operative oedema management included compression hosiery. The patient reported significant pain on application, difficulty donning garments independently, and increased distal swelling involving the foot and knee. A gentle textile-based differential-pressure wrap was introduced as an adjunctive support to promote passive fluid movement via micro-pressure variation. Following subsequent surgery and placement of an external fixation cage, compression could no longer be applied. The same differential-pressure support was adapted for use within and around the fixation framework.

Outcome:
The patient reported improved comfort, softening of tense tissues, and the ability to wear the support consistently during daily recovery. Clinicians observed visible reduction in localised fluid congestion and improved tissue responsiveness compared with prior compression attempts. Importantly, the approach supported patient autonomy and active participation in oedema self-management during a complex rehabilitation phase.

Implications:
This case highlights the clinical decision-making required when standard compression is not feasible due to surgical complexity or intolerance. Gentle, low-burden differential-pressure support may offer temporary adjunctive benefit in trauma and orthopaedic contexts where compression is contraindicated or poorly tolerated. Further structured investigation is required to define indications, contraindications, and integration into lymphatic rehabilitation pathways.

CONCURRENT PAPERS & FREE PAPER SESSIONS

Poster P10

A complex case of a patient with abdominal lymphoedema following bilateral mastectomy for breast cancer and bowel obstruction with hernia repair.

Dr Cassandra Mciver, Dashanka Soodan, Vani Prasad Atluri

Lymphoedema And Laser Therapy

Background:
A 62yo female (HP) presented with severe abdominal lymphoedema and pain following treatment for invasive ductal triple negative breast cancer, TRAM flap reconstruction with mesh reinforcement and a bowel obstruction resulting in large abdominal hernias also requiring mesh reinforcement. The patient reported experiencing chronic abdominal pain and significant abdominal swelling. Her goal was to reduce the daily discomfort by decreasing the swelling and associated pain.

Method:
HP was originally seen by a lymphoedema remedial massage therapist in Melbourne using manual lymphatic drainage (MLD) and low-level light therapy (Laser therapy) as treatment modalities. The patient then transferred to Adelaide for work and was referred to our clinic for assessment and treatment.

Interventions that have been trialled and modified include:

- Day and night compression garments
- Laser therapy on the abdomen and groin
- MLD to abdomen and lateral trunk
- Lymphatic kinesiotaping, including an abdominal sling for support and to facilitate drainage
- Supervised Exercise Medicine
- Physiotouch to abdominal scar and manual suction techniques
- Acupuncture
- Weight loss
- Indocyanine green (ICG) lymphography of lower legs and abdomen to determine drainage pathways

Outcome:
Over 50 consultations on a regular (fortnightly) basis. Slowly reducing pain medications. ICG mapping was pivotal in determining flow pathways and assisting MDL effectiveness. Treatment is currently ongoing with continuing modifications to a range of therapies to determine the most effective.

Conclusions:
Complex clinical cases require flexibility, problem solving with constant client and health professional consultation in order to provide the best outcomes that meet the patients' goals.