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# The tissue trauma team: a multidisciplinary approach to wound and oedema management

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## *Summary*

*The Tissue Trauma Clinic (TTC) at the John Lindell Rehabilitation Unit (JLRU), Bendigo Health Care Group, offers a comprehensive multidisciplinary approach to wound and oedema management, including the management of leg ulcers, pressure ulcers, burns, lymphoedema and other chronic oedemas, for clients of all ages. This article will discuss the structure and function of the clinic, patient assessments, treatments, other services provided and outcomes.*

## **Introduction**

Bendigo, located 150km north of Melbourne, Australia and boasting a population of 80,000, is one of the largest regional cities in Victoria.

The Bendigo Health Care Group provides hospital care, aged care, rehabilitation, mental health and community services as well as health promotion to Bendigo and surrounding districts within the Loddon Campaspe Region. The population of this catchment area is approximately 183,000<sup>1</sup>.

The JLRU is an integral part of the Rehabilitation and Aged Care Division of the Bendigo Health Care Group and is situated at the Anne Caudle Campus in Barnard Street, Bendigo.

The unit “provides complex specialist multidisciplinary outpatient rehabilitation to people of all ages in the Loddon Campaspe region of Central and Northern Victoria. The service has continually developed in response to community needs<sup>2</sup>”. There are currently 16 specialist JLRU clinics,

including TTC, pain management, amputee, diabetic foot, falls and balance, memory, rheumatology, children’s, complex care, spinal, general outpatients, senior stream pain, hand and upper limb and brain trauma.

It has long been evident that it is essential to approach wound management from a multidisciplinary perspective which encompasses the whole patient, rather than the presenting wound<sup>3</sup>. The TTC, based at JLRU, was developed in response to the needs of the Bendigo Health Care Group consumers, reflected in the amount of referrals received from GPs requiring specialist wound and oedema management for their patients. Prior to the development of this service, patients relied on health services such as district nursing or their GP, with many travelling to Melbourne for management.

Since the establishment of the TTC and associated team, outcomes have indicated an increased healing rate, an improved quality of life and health, a reduction in inpatient admissions and a reduction in the wound recurrence rate.

In August 1999, there were 199 patients registered in the TTC (both new and existing patients) and of those, 93 clients received wound management. The remaining clients received management for oedema and lymphoedema with no associated wound management required. Wound aetiologies varied from venous and/or arterial leg ulcers, pressure ulcers, malignancies, burns, traumatic and surgical wounds. All wounds had been evident for a period of 3 months or more. Of those 93 clients, preliminary statistics indicate 80 per cent of patients healed

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within a mean period of 2.6 months. Of those clients whose wounds had not healed, four are deceased and five had been referred for skin grafting or other surgical intervention. Twenty seven of the 93 clients continue to receive ongoing wound management and demonstrate a continued reduction in wound area and improved quality of life.

The objective of the clinic is to provide a multidisciplinary approach to wound and oedema management at world's best practice standard, for clients of all ages within the Bendigo Health Care Group.

## Structure of the clinic

The clinic is staffed by nine health professionals (Table 1). All staff have a special interest in the field of wound and oedema management and are committed and proactive in order to ensure the service provided meets best practice standards through regular education and liaison with other similar clinics. The team approach to wound and oedema management is essential in the provision of holistic care.

The specific roles and functions of the team members are:

- *The clinical nurse consultant (CNC)*: coordinates the clinic and provides wound and oedema management. The CNC is instrumental in liaising with other team members and community services involved in each client's care.
- *The registered nurse (Division 2)*: responsible for the provision of wound and oedema management for clients, depending on their individual needs.
- *The physiotherapist*: available to provide clients with an exercise programme, ultrasound or interferential treatment, dependent on patient needs. In addition, advice and management related to oedema and lymphoedema are provided.
- *The occupational therapist*: provides clients with advice on pressure area relief, chronic oedema and lymphoedema management as well as home, work site or driving assessments.
- *The medical officer*: provides medical advice and treatment for clients based on their individual needs.
- *The dietician*: available for nutritional advice and management following assessment.
- *The pharmacist*: available to provide advice on medication and dressing products as required.

- *The compression garment manufacturer (occupational therapy assistant)*: manufactures custom-made compression garments for scar reduction and the management of acute and chronic oedema and lymphoedema. Also responsible for follow up of those clients identified as being at risk for further tissue breakdown and reports to the team at each weekly meeting in order to determine each client's progress and need for further input.
- *The podiatrist*: provides clients with advice and foot care as appropriate to the patient needs.

Other disciplines, such as an orthotist, social worker and psychologist are available for consultation and/or treatment through the main body of the JLRU and any member of the team can refer clients to these services.

## TTC services

The TTC offers a wide range of services, including:

### Weekly clinics and client assessment

The tissue trauma team conducts a weekly clinic for clients requiring wound and oedema management. Each client referred to the TTC will undergo a comprehensive assessment by one or more of the clinic's practitioners. Often the client will see more than one practitioner at the same time, while others are assessed by one practitioner and subsequently referred to other team members. Digital photography and video imaging are included in each assessment and subsequent reviews in order to monitor efficacy of treatment.

**Table 1. The tissue trauma team.**



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Follow up and review appointments are also offered at various times through the week, according to individual client needs.

The team also works closely with other JLRU clinics, such as the amputee, spinal, hand and upper limb, diabetic foot clinic, rheumatology and complex care clinics in the provision of wound and oedema management.

### **Vascular assessments**

In addition to the general assessment, all clients evaluated at the TTC for lower leg oedema and leg ulcers undergo a Doppler ultrasound and Ankle Brachial Index (ABI) in order to assess the degree of arterial ischaemia and determine the appropriate course of action.

In the presence of lower leg oedema, it is essential to obtain the ABI reading before proceeding with compression therapy<sup>4</sup>. Readings of >1 to 0.95 indicate no significant flow reduction and compression therapy can be safely applied. However, readings below this level may indicate diminished arterial flow and the application of compression can indeed result in further tissue damage<sup>4</sup>. All clients with a reading of 0.7 or less are automatically referred to a vascular surgeon for assessment and management advice.

### **Nutritional assessment**

At assessment, each client undergoes a nutritional screening and is referred to the team dietician as appropriate. Nutritional screening includes assessment of current and recent nutrient intake and nutritional status, anthropometry (weight, height, recent weight change, BMI, ideal body weight, biochemistry – serum albumin, FBE, BSL) and documentation (stage, phase and size of wound, presence of exudate) in order to identify any underlying nutritional deficiencies which affect wound healing<sup>5,6</sup>.

### **Tele and video-conferencing facilities**

Teleconferencing and video conferencing facilities are available for those clients in rural Victoria unable to attend the clinic. This service is also of great value for liaison with and provision of education to health professionals in the surrounding rural area. This programme is coordinated through the unit and is currently being formalised.

### **Case conference**

Case conferences are held weekly. The team discusses each client's case to evaluate the effectiveness of the prescribed treatment regimens and to monitor the progress of the patient in general. The team also identifies clients deemed to be at risk

of further tissue breakdown and arrangements are made for follow up telephone contacts. This ensures that the team's objectives of the provision of quality, holistic care are being met. Other health professionals are invited to attend when necessary.

### **Wound management manual**

The team has produced a *Wound Management Manual for Health Professionals* which provides information regarding wound and oedema management from a holistic perspective. The information included in the manual comprises dietary advice, foot care, exercises, garment care, as well as product advice and general wound and oedema management.

### **Worksite/home/driving assessments**

Clients who suffer a physical restriction as a result of an illness or injury or clients requiring wound and oedema management may require a worksite or home assessment in order to reduce or overcome difficulties encountered. Other services offered include driving assessments and vehicle modifications which may enable individuals to continue driving despite a reduction in range of movement relate to limb swelling or pain.

### **Training and education**

The team provides training and education in wound and oedema management to consumers and health professionals within the service area. The team provides wound and oedema management inservice education sessions across the health care group and sessions have now been incorporated into the RMO rotation through the health care group, as well as the RN Division 2 training course and RN Division 1 Post Basic Gerontology Course, run by the Bendigo Collaborative Health, Education and Research Centre (CHERC).

As a result of team members' involvement in both national and international conferences and practitioners' groups, there has been an increased demand for the provision of sessional education for other health facilities within the area.

### **Custom made compression garments**

Following client assessment, an appropriate treatment regimen is agreed upon between the client and therapist(s). If the regimen includes the provision of a custom-made compression garment for oedema, lymphoedema or scar reduction, measurements are taken by a lymphoedema practitioner or the 'on site' compression garment manufacturer. The garment is fitted within 1 to 2 weeks, depending on the individual's needs. The client and garment are reviewed regularly for garment alterations in order to maintain

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the correct fit and optimum function of the garment, ensure compliance in the wearing of the garment and identify any skin problems such as irritation or friction.

The Orthopaedic Appliances Pty Ltd (OAPL) store, located on the Anne Caudle Campus, provides commercially available garments such as compression stockings, gloves, sleeves and gauntlets from various manufacturers, depending on the individuals needs. The store also stocks a range of dressing and skin care products available for purchase by patients, as recommended by the team, for ongoing wound management.

### **Provision of intensive treatments for lymphoedema**

There are three lymphoedema practitioners working within the team. Each works very closely with the other, ensuring continuity of care for each client requiring management. The modern approach to lymphoedema management encompasses four elements; skin care, exercise, compression (garments and specialised bandaging) and manual lymphatic drainage (MLD), each of which is implemented by the practitioners within the team, in conjunction with the clients needs and wishes. MLD involves specialised massage techniques which stimulate the lymph system and encourage drainage of fluid from the congested areas in the body. It is used in conjunction with the aforementioned techniques, according to individual requirements<sup>7</sup>.

This service is offered on a daily basis for 1 to 2 weeks, depending on the clients' individual needs.

### **Hydrotherapy**

All clients, particularly those with lymphoedema, are offered hydrotherapy sessions. The team physiotherapist conducts group and individual sessions. The hydrotherapy sessions for lymphoedema clients commenced in 1995 and run on a weekly basis, for up to 10 clients per session. A recent customer satisfaction survey conducted by Rosalind Deacon indicated that the perceived benefits of hydrotherapy were improved flexibility, fitness, balance, strength, mobility and confidence. Limb measurements are taken weekly for new clients, and tapered to 6 monthly for long-term clients, both before and after hydrotherapy sessions.

### **Liaison with GPs, district nursing, palliative care and support services**

The team ensures close liaison with the GPs, district nursing service and palliative care team in order to provide a quality care continuum for each client. Close links are also maintained with

community groups, such as Encore, Bendigo Breast Cancer Support Service Network and the Lymphoedema Support Group.

### **Accommodation**

For clients who travel long distances to receive treatment at the clinic, accommodation is available on campus within the purpose built motel style units, from \$10 per night.

### **Consultative service**

The team offers a consultative service to nursing homes and hostels for clients who are unable to attend the clinic. Clients in rural areas are offered this service via teleconferencing and telephone contact.

### **Summary**

It is evident through the increasing amount of referrals received and the increased demand for team input, that the service provided by the team plays a vital role not only within the Bendigo Health Care Group and Loddon Mallee region, but also in the wider community. Certainly the feedback received from other health professionals and the consumer group indicates an improved quality of life and health as a result of attending the clinic. Preliminary data evaluation indicates an increased healing time, a reduction in inpatient admissions and a reduction in the wound recurrence rate as a result of the exemplary services provided by the tissue trauma team.

The scope of services that the team is able to offer continues to expand with the potential for utilising products, such as Dermagraft, in conjunction with the Diabetic Foot Clinic and planned clinical research for 2001. Through continued participation in local, national and international events, the team will continue to strive toward world best practice.

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