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Pacella, Rosana, Tulleners, Ruth, McCosker, Laura, Cheng, Qinglu, Harding, Keith, Edwards, Helen, Yelland, Stephen, Dyer, Anthony, McGuinness, Bill, & Graves, Nicholas  
(2019)

Reimbursement for the cost of compression therapy for the management of venous leg ulcers in Australia.

*International Wound Journal*, 16(4), pp. 1069-1072.

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<https://doi.org/10.1111/iwj.13152>

## **Reimbursement for the Cost of Compression Therapy for the Management of Venous Leg Ulcers in Australia**

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**Word count:** 1669 excluding references

### **Conflict of Interest**

All authors declare no conflicts of interest

**Abstract (200 words)**

Australia's health system is world-class, however wound management in Australia is extremely complex and diverse, and the prevention and treatment of venous leg ulcers (VLUs), is an area where Australia particularly lags behind. Evidence-based Australian guidelines recommend compression therapy as the primary treatment for VLUs, however despite significant evidence of the health and economic benefits of compression therapy, it is not widely used in practice. Compression therapy is not subsidised through the Medicare Benefits Schedule (MBS) or Pharmaceutical Benefits Scheme (PBS) which list medicines subsidised by the Australian Government. Therefore patients must also pay high out-of-pocket costs for VLU treatments, including for products such as compression bandages. A large health economics collaboration culminated in a strong body of evidence showing that adequate reimbursement for guideline-based services and products would not only result in cost savings for patients and the health system but also improve health outcomes and quality of life for patients with VLUs in Australia. There is an urgent need to change current practice in Australia to allow the costs of compression therapy to be adequately reimbursed to both patients and health care providers by listing compression therapy in PBS for all affected individuals or creating wound-specific MBS items.

**Key words**

Cost-effectiveness; venous leg ulcers; evidence-based practice; compression therapy; wound management; Australia

Running title: Reimbursement for compression therapy in Australia

## **Reimbursement for the Cost of Compression Therapy for the Management of Venous Leg Ulcers (VLUs) in Australia**

Australia's health system is world-class. The nation's life expectancy is one of the highest in the world, its death rates are continually trending downward, and the population's overall health compares well with that of similar Organisation for Economic Co-operation and Development (OECD) countries.<sup>1</sup> However, wound management, particularly the prevention and treatment of venous leg ulcers (VLUs), is an area where Australia lags behind.

Due to a lack of up-to-date evidence on the prevalence of chronic wounds in Australia, the exact number of Australians affected by VLUs is largely unknown. Based on prevalence data from UK and US studies, cases of VLUs in hospitals and residential care settings in Australia have been estimated to be more than 47 000 annually.<sup>2</sup> The costs associated with treating VLUs in Australian hospitals and residential care settings have been estimated at more than AUD1 billion annually.<sup>2</sup> This estimate does not include the costs of treating VLUs in the community but our recent research in community settings in Queensland indicate these costs are high<sup>3-5</sup>.

Wound management in Australia is extremely complex and diverse. It takes place along a continuum from the primary to the acute care sector. Primary care is at the forefront of wound management with general practitioners (GPs) involved in the care of around 80–90% of patients with a leg ulcer.<sup>6</sup> In an audit of current wound management in general practices, the total costs of wound care in most cases was greater than the total income, resulting in a net loss to the general practice.<sup>7</sup> In Australia, patients must also pay high out-of-pocket costs for VLU treatments, including for products such as compression bandages.<sup>8</sup> There are also direct costs to patients related to attending multiple healthcare appointments, reduced quality of life and work capacity<sup>3, 5</sup>.

Evidence-based Australian guidelines recommend compression therapy as the primary treatment for VLUs.<sup>9</sup> Despite this, it is not widely used in practice. Early studies found that between 40% and 60% of VLUs in Australia do not receive adequate compression.<sup>10</sup> In more recent studies, the rate of patients with a VLU receiving compression therapy prior to admission to a specialist wound clinic ranged from 6.3% to 23%.<sup>5, 6</sup> In those who are prescribed compression therapy, non-concordance often remains high and increases the risks of poor outcomes in patients with VLUs.<sup>11</sup> There are multiple reasons for non-concordance; however, the costs associated with compression products and lack of reimbursement are key.<sup>12</sup>

Medicare, Australia's universal health insurance scheme, funded by the Australian Government, reimburses health care provided by GPs, medical specialists and nurse practitioners outside

hospital as per the Medicare Benefits Schedule (MBS). Unlike many other developed countries, in Australia, compression therapy is not subsidised through MBS or Pharmaceutical Benefits Scheme (PBS), which list medicines subsidised by the Australian Government, with the exception of veterans who have served in the Australian Defence Force, who receive a subsidy through the Repatriation Pharmaceutical Benefits Scheme (RPBS). Outside hospitals, patients must purchase the compression therapy products prescribed to them from GPs, retail pharmacies or commercial distributors. For patients not covered by the RPBS, costs for three months of compression bandages may exceed AUD \$600<sup>13</sup>. These estimates do not include the additional costs of care provided by healthcare professionals related to the application of compression bandages, a service which can be time-consuming and, therefore, costly.

A recent report found that people with VLUs aged over 60 years pay AUD \$9.17 million each year in out-of-pocket costs for compression therapy consumables.<sup>8</sup> When considering the frequency with which these bandages should be replaced<sup>14, 15</sup>, and the demographic likely to be accessing these products<sup>6</sup>, it is little wonder that high costs remain a significant barrier to patients accessing evidence-based care in Australia<sup>16</sup>.

Furthermore, with no wound-specific MBS item numbers, and the subsequent inability to access reimbursement for clinician time and consumables through the MBS, there are no financial or time-saving incentives for general practices to become actively involved in evidence-based wound care.<sup>12</sup> Health care professionals use a range of MBS items for wound care services and claim these as fees for service. They are then paid as a percentage of items billed. As evidence-based wound assessment and management can be particularly time consuming, consultations are based on the presenting problem with little opportunity for preventive measures. The use of less expensive dressings at the start of treatment has been shown to increase overall costs to the health system in the long run, because of increased healthcare utilisation through frequent GP visits, wounds take longer to heal and there is an increased risk of complications requiring hospitalisation.<sup>17</sup> However, GPs controlling their own budgets may find it difficult to invest in more expensive evidence-based wound products that reduce risk of hospitalisation because they do not want to pay for benefits accrued elsewhere in the health system.<sup>12</sup>

Use of treatments which are maximally effective and cost-effective is essential to the ongoing viability of Australia's healthcare system. Our research modelling the costs of the provision of compression therapy products to people with VLUs, as part of broader evidence-based care, has shown it would cost the Australian health system an additional AUD \$270 million over 5 years to fund compression therapy, but would result in a cost saving in the same period of AUD \$1.4 billion and improve patient outcomes.<sup>18</sup> The model takes into account the ageing population, new incident

VLU cases that develop over time, recurrence and hospitalisations. An evaluation of unfavourable values for key parameters in this model showed a wide margin of confidence to support the findings. A large body of related research as part of a large health economics collaboration between academics, health professionals, and industry partners supports these findings<sup>4</sup>, with similar modelling indicating that reimbursement for compression products increases patients' health-related quality of life and quality-adjusted life expectancy.<sup>18, 19</sup>

With such clear evidence to show that a reimbursement scheme for VLU compression products should be established in Australia, we explored how this is done in other comparable countries. In the UK, the National Health Service (NHS) Drug Tariff identifies the healthcare products eligible for reimbursement<sup>20</sup>. Some types of compression bandages are subsidised or reimbursed under the Drug Tariff<sup>21</sup>. These wound products must be prescribed by a medical practitioner and patients aged ≥60 are entitled to exemptions from prescription charges<sup>21</sup>. The consumer price in the UK of a standard bandaging system, for example *Coban 2*, is GBP £8.31<sup>22</sup> (AUD15.27) – the same product in Australia costs patients AUD \$43.95<sup>13</sup>. It is important to note that even with reimbursement of some wound products through the NHS Drug Tariff, wounds still impose a considerable economic burden on NHS in the UK, similar to that of managing obesity and there is a need for improved systems of care, improved education of health professionals as well as an increased awareness of the impact of chronic wounds.<sup>23</sup>

In Australia, the Chronic Wounds Solutions Collaborating Group was established to support and monitor the implementation of evidence-based efforts<sup>16</sup>. The group launched its Call to Action in 2018 which included a reimbursement scheme for compression therapy. The challenge however has been: how can we expect the federal government to fund this scheme when health care budgets are already constrained? We need to identify areas and opportunities for disinvestment in low value care, to enable the redirection of savings toward high value services. Public hospital services in Australia are jointly funded by the federal and state and territory governments, and hence, another challenge is that we are asking for investment by the Australian government in primary health care when there is a perception that savings are going to be accrued mainly by State and Territory governments through avoided hospitalisations. Interestingly, our research shows that the cost savings to the Australian government through reduced health service utilisation as a result of faster healing of wounds, ulcers avoided and hospitalisations avoided would be about AUD \$1.2 billion (85% of cost-savings to the health system) and to state and territory governments about AUD \$200 million over 5 years through reductions in hospitalisations due to complications.<sup>18</sup>

Supply schemes already exist for other dressings and appliances in Australia – including the National Epidermolysis Bullosa Dressing Scheme allowing ongoing access to dressings for all

eligible patients in Australia, the Stoma Appliance Scheme, the Continence Aids Payment Scheme, and the National Diabetes Services Scheme. A national scheme which subsidises compression therapy via prescriptions from accredited wound care providers may be modelled from these, and would be vital for improving efficiency and value in our health system.

Strong political will and leadership are prerequisites for the effective implementation of evidence-based wound care – but this is still inadequate in Australia. Supported by our research, the Australian federal government has recently displayed some progress in relation to chronic wound management, including the referral of wound management to the MBS Review Taskforce for consideration, the investment of AUD1 million in a primary healthcare wound management program, and the identification of chronic wound management as a priority under the Medical Research Future Fund.<sup>24</sup> Beyond this, we need a cohesive health system working collaboratively across all levels of government to unite the many stakeholders, including the private and industry sectors, non-governmental organisations, healthcare professionals, academics and the public and to improve communication and efficiency across wound care services.

There is an urgent need to change current practice in Australia to allow the costs of compression therapy to be publicly funded and adequately reimbursed to both patients and health care providers. This must be combined with education and training of health professionals in evidence-based wound management and incentives for cost-effective care and prevention within the MBS, moving from a fee-for-service to a more proactive service that incentivises positive patient outcomes with improved communication and efficiency across wound care services<sup>16</sup>. Implementing a large-scale change to current practice is complex and would take time. However, given convincing evidence that adequate reimbursement for guideline-based services and products will result in cost savings for the Australian health system and patients, and also improve health outcomes and quality of life for patients, a national program of reimbursement for compression therapy remains a sensible policy.

## **Acknowledgements**

The authors would like to acknowledge the support of the Australian Government's Cooperative Research Centres Program. The Wound Management Innovation Cooperative Research Centre (WMI CRC) received funding from the Australian Government, Curtin University, Queensland University of Technology, Smith & Nephew Pty Limited, Southern Cross University, University of South Australia, Blue Care, the Department of Health South Australia, the Department of Health and Human Services Victoria, Ego Pharmaceuticals Pty Ltd, Metropolitan Health Service/Wounds West, Queensland Health, Royal District Nursing Service Limited as part of the Bolton Clarke Group, Royal Melbourne Institute of Technology, Silver Chain Group Ltd, 3M Australia Pty LT, KCI Medical Australia Pty Ltd, Capital Health Network Pty Ltd, Mölnlycke Health Care Pty Ltd, Paul Hartmann Pty Ltd, Swinburne University of Technology, The University of Queensland, University of Melbourne, University of Tasmania, The University of Western Australia and Wounds Australia Ltd. The funding sources played no role in study design; in the collection, analysis and interpretation of data; in the writing of the report; or in the decision to submit the article for publication.



## References

1. Australian Institute of Health and Welfare (AIHW). Australia's Health 2016: In Brief 2016 [cited 2018 Nov 14]. Available from: <https://www.aihw.gov.au/getmedia/7752644b-e6f0-4793-b4e0-74ef3093c589/19748-ah16-ib.pdf.aspx?inline=true>.
2. Graves N, Zheng H. Modelling the direct health care costs of chronic wounds in Australia. *Wound Practice and Research*. 2014;22(1):20-33.
3. Barnsbee L, Cheng Q, Tulleners R, Lee X, Brain D, Pacella R. Measuring costs and quality of life for venous leg ulcers. *International Wound Journal*. 2019;16(1):112-21.
4. Brain D, Tulleners R, Lee X, Cheng Q, Graves N, Pacella R. Cost-effectiveness analysis of an innovative model of care for chronic wounds patients. *PLoS One*. 2019.
5. Tulleners R, Brain D, Lee X, Cheng Q, Graves N, Pacella RE. Health benefits of an innovative model of care for chronic wounds patients in Queensland. *International Wound Journal*. 2018.
6. Edwards H, Finlayson K, Courtney M, Graves N, Gibb M, Parker C. Health service pathways for patients with chronic leg ulcers: Identifying effective pathways for facilitation of evidence based wound care. *BMC Health Services Research*. 2013;13(86):1-10.
7. Whitlock E, Morcom J, Spurling G, Jamanian T, Ryan S. Wound care costs in general practice - A cross-sectional study. *Australian Family Physician*. 2014;43:143-6.
8. Australian Wound Management Association (AWMA) and KPMG. An Economic Evaluation of Compression Therapy for Venous Ulcers 2013 [Available from: [http://www.woundsaustralia.com.au/publications/kpmg\\_report\\_brief\\_2013.pdf](http://www.woundsaustralia.com.au/publications/kpmg_report_brief_2013.pdf)].
9. Australian Wound Management Association (AWMA). Australian and New Zealand Clinical Practice Guideline for Prevention and Management of Venous Leg Ulcers 2011 [Available from: [http://www.woundsaustralia.com.au/publications/2011\\_awma\\_vlug.pdf](http://www.woundsaustralia.com.au/publications/2011_awma_vlug.pdf)].
10. Kruger AJ, Raptis S, Fitridge RA. Management practices of Australian surgeons in the treatment of venous ulcers. *ANZ Journal Of Surgery*. 2003;73(9):687-91.
11. Korn P, Patel ST, Heller JA, Deitch JS, Krishnasastry KV, Bush HL, et al. Why insurers should reimburse for compression stockings in patients with chronic venous stasis. *Journal Of Vascular Surgery*. 2002;35(5):950-7.
12. Norman RE, Gibb M, Dyer A, Prentice J, Yelland S, Cheng Q, et al. Improved wound management at lower cost: A sensible goal for Australia. *International Wound Journal*. 2016;13(3):303-16.
13. Independence Australia Group. Coban 2 Layer Compression System 2018 [cited 2018 Nov 15]. Available from: <https://store.independenceaustralia.com/coban-2-layer-compression-system.html>.
14. National Institute for Health and Clinical Excellence. Coban 2 for venous leg ulcers 2018 [cited 2018 Nov 14]. Available from: <https://www.nice.org.uk/advice/mib140/chapter/The-technology>.
15. O'Donnell TF, Lau J. A systematic review of randomized controlled trials of wound dressings for chronic venous ulcer. *Journal Of Vascular Surgery*. 2006;44(5):1118-25.
16. Pacella RE, Tulleners R, Cheng Q, Burkett E, Edwards H, Yelland S, et al. Solutions to the Chronic Wounds Problem in Australia: A Call to Action. *Wound Practice and Research*. 2018;26(2):84-98.
17. Kerstein M, Gemmen E, van Rijswijk L, Lyder C, Phillips T, Xakellis G, et al. Cost and cost effectiveness of venous and pressure ulcer protocols for care. *Disease Management and Health Outcomes*. 2001;9:651-63.
18. Cheng Q, Gibb M, Graves N, Finlayson K, Pacella RE. Cost-effectiveness analysis of guideline-based optimal care for venous leg ulcers in Australia. *BMC Health Services Research*. 2018;18(1):421.
19. Cheng Q, Kularatna S, Lee XJ, Graves N, Pacella RE. Comparison of EQ-5D-5L and SPVU-5D for measuring quality of life in patients with venous leg ulcers in an Australian setting. *Quality of Life Research*. 2019.
20. National Health Service Business Services Authority. Drug Tariff 2018 [cited 2018 Nov 14]. Available from: <https://www.nhsbsa.nhs.uk/pharmacies-gp-practices-and-appliance-contractors/drug-tariff/drug-tariff-part-ix>.
21. National Health Services Business Services Authority. NHS Electronic Drug Tariff 2017 [cited 2018 Nov 15]. Available from: [http://www.drugtariff.nhsbsa.nhs.uk/#/00446515-DC\\_2/DC00446511/Home](http://www.drugtariff.nhsbsa.nhs.uk/#/00446515-DC_2/DC00446511/Home).

22. National Health Service Business Services Authority. NHS Electronic Drug Tariff - Part IXA - Appliances 2018 [cited 2018 Nov 15]. Available from: <http://www.drugtariff.nhsbsa.nhs.uk/#/00655804-DA/DA00655471/PartIXA-Appliances>.

23. Guest JF, Ayoub N, McIlwraith T, Uchegbu I, Gerrish A, Weidlich D, et al. Health economic burden that wounds impose on the National Health Service in the UK. *BMJ Open*. 2015;5(e009283).

24. Hunt G. (2018) Transcript - Remarks: Australian Medical Association (AMA) National Conference. Canberra, ACT: Retrieved from Australian Department of Health website [http://www.health.gov.au/internet/ministers/publishing.nsf/Content/AA92E8BA0BB496C2CA2582980022BD90/\\$File/GH180525a.pdf](http://www.health.gov.au/internet/ministers/publishing.nsf/Content/AA92E8BA0BB496C2CA2582980022BD90/$File/GH180525a.pdf).