

# Response to “Hand transplantation: current challenges and future prospects”

Jennifer Trofe-Clark<sup>1,2</sup>  
L Scott Levin<sup>3-6</sup>

<sup>1</sup>Renal, Electrolyte and Hypertension Division, Perelman School of Medicine University of Pennsylvania, Philadelphia, PA, <sup>2</sup>Department of Pharmacy Services, Hospital of the University of Pennsylvania, Philadelphia, PA, <sup>3</sup>Penn Hand Transplant Program, Hospital of the University of Pennsylvania, Philadelphia, PA, <sup>4</sup>Hand Transplantation Program, Children’s Hospital of Philadelphia, PA, <sup>5</sup>Department of Orthopaedic Surgery, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, <sup>6</sup>Department of Surgery, Perelman School of Medicine, University of Pennsylvania Philadelphia, PA, USA

## Dear editor

We read with interest the recent review article by Alolabi et al entitled: “Hand transplantation: current challenges and future prospects”.<sup>1</sup> However, one significant omission to the “ideal multidisciplinary transplant team” is the absence of a transplant pharmacist.<sup>1</sup>

In 2004, the United Network for Organ Sharing bylaws stated that all organ transplant programs in the United States should identify one or more pharmacists with experience in transplant pharmacotherapy to be responsible for providing pharmaceutical care to solid organ transplant recipients.<sup>2</sup> Additionally, in 2007 the Centers for Medicare and Medicaid Services (CMS) accreditation standards for transplant centers mandated that a transplant center must identify a multidisciplinary transplant team composed of individuals from medicine, nursing, nutrition, social services, transplant coordination and pharmacology.<sup>3</sup> The expectation of CMS is that a transplant pharmacist be involved in every phase of transplant patient’s care (evaluation phase, transplant phase and posttransplant phase). As a result, transplant pharmacists actively participate in both the adult hand transplant program at our institution (Penn Hand Transplant Program at the Hospital of the University of Pennsylvania) and the Children’s Hospital of Philadelphia Hand Transplantation program.

We recognize that these same requirements do not yet extend to vascular composite allotransplant (VCA) programs in the United States, and that the authors of this article are practicing in Canada. However, we would stress that, similar to organ transplant,<sup>4,5</sup> transplant pharmacists play an essential role in the management of these incredibly complicated patients and therefore should be recognized as an integral member of the multidisciplinary VCA team.

A few examples of key contributions that a transplant pharmacist can routinely provide in each phase of care are as follows: 1) evaluation phase: identification, stratification and mitigation of pharmacologic and non-pharmacologic risk factors (including medication nonadherence), participation in patient and caregiver medication education; 2) transplant phase: drug selection, dosing and monitoring, therapy recommendations (including management of drug interactions), medication reconciliation, collaboration with transplant social worker and finance to assist with medication costs and coverage, participation in discharge patient and caregiver medication education; and

Correspondence: Jennifer Trofe-Clark  
Perelman Center for Advanced Medicine,  
2nd Floor West-Transplant Clinic, 3400  
Civic Blvd., Philadelphia, PA 19104  
Email [jennifer.trofe-clark@uphs.upenn.edu](mailto:jennifer.trofe-clark@uphs.upenn.edu)

3) posttransplant phase: all activities from transplant phase plus continuous monitoring for medication adherence and ongoing patient and caregiver medication education.

Transplant pharmacists are also extensively involved in programmatic activities such as development of medication protocols and monitoring guidelines, medication utilization reviews, pharmacy and therapeutics committees, and quality assurance and process improvement initiatives. Transplant pharmacists contribute to clinical research activities, regularly provide input and education to providers in multidisciplinary forums, and provide education to a variety of pharmacy and medical subspecialties. Furthermore, numerous transplant pharmacists enthusiastically participate in national and international transplant-related organizations, including the American Society of Transplantation VCA Advisory Committee.

In summary, transplant pharmacists are important stakeholders to assist VCA providers, caregivers and patients with complex pharmacologic management, education, clinical research, program development and advancement of practice in all phases of transplant care. Therefore, transplant pharmacists should be considered a valued member of the ideal multidisciplinary VCA team to promote optimal patient and graft outcomes.

## Acknowledgments

This letter is a work product of the American Society of Transplantation's Transplant Pharmacy Community of Practice in partnership with the Society's Vascular Composite Allograft Transplant Advisory Council.

## Disclosure

The authors report no conflicts of interest in this communication.

## References

1. Alolabi N, Augustine H, Thoma A. Hand transplantation: current challenges and future prospects. *Transplant Research and Risk Management*. 2017;9:23–29.
2. United Network for Organ Sharing. United Network for Organ Sharing (UNOS) Bylaws: appendix D: membership requirements for transplant hospital and transplant programs. Available at: [https://www.unos.org/wp-content/uploads/unos/UNOS\\_Bylaws.pdf?x14411](https://www.unos.org/wp-content/uploads/unos/UNOS_Bylaws.pdf?x14411). Accessed March 27, 2017.
3. Centers for Medicare and Medicaid Services (CMS) HHS. Medicare program; hospital conditions of participation: requirements for approval and re-approval of transplant centers to perform organ transplants. Final rule. *Fed Regist*. 2007;72:15197–15280.
4. Alloway RR, Dupuis R, Gabardi S, et al. Evolution of the role of the transplant pharmacist on the multidisciplinary transplant team. *Am J Transplant*. 2011;11:1576–1583.
5. Taber DJ, Pilch NA, Trofe-Clark J, Kaiser TE. A national survey assessing the current workforce of transplant pharmacists across accredited U.S. solid organ transplant programs. *Am J Transplant*. 2015;15:2683–2690.

## Authors' reply

Noor Alolabi<sup>1</sup>

Achilles Thoma<sup>1-3</sup>

<sup>1</sup>Division of Plastic Surgery, Department of Surgery, <sup>2</sup>Surgical Outcomes Research Centre, <sup>3</sup>Department of Clinical Epidemiology and Biostatistics, McMaster University, Hamilton, ON, Canada

### Dear editor

We would like to thank Drs Jennifer Trofe-Clark and L Scott Levin for their letter in response to our published article “Hand transplantation: current challenges and future prospects”.<sup>1</sup> We would also like to commend the Penn Hand Transplant Program’s work and efforts in advancing the field of hand transplantation.

We do agree that a transplant pharmacist should certainly be part of the “ideal multidisciplinary transplant team”. As accurately stated by your letter, the role of the pharmacist in

the treatment of these complex patients is absolutely vital. Table 2 in our published article<sup>1</sup> provides only a sample of what the multidisciplinary team requirements for a hand transplant center may include. However, this list may need to be adjusted depending on the center and the specific services present. Despite this, we do believe that identifying a standardized multidisciplinary team that should be present when developing a hand transplant center is essential for future success. As such, including “transplant pharmacist” to the table is necessary.

### Disclosure

The authors report no conflicts of interest in this communication.

### Reference

1. Alolabi N, Augustine H, Thoma A. Hand transplantation: current challenges and future prospects. *Transplant Research and Risk Management*. 2017;9:23–29.

Dove Medical Press encourages responsible, free and frank academic debate. The content of the Transplant Research and Risk Management ‘letters to the editor’ section does not necessarily represent the views of Dove Medical Press, its officers, agents, employees, related entities or the Transplant Research and Risk Management editors. While all reasonable steps have been taken to confirm the content of each letter, Dove Medical Press accepts no liability in respect of the content of any letter, nor is it responsible for the content and accuracy of any letter to the editor.

#### Transplant Research and Risk Management

#### Publish your work in this journal

Transplant Research and Risk Management is an international, peer-reviewed open access journal focusing on all aspects of transplantation and risk management to achieve optimal outcomes in the recipient improving survival and quality of life. The manuscript management system is completely online and includes a very quick and fair peer-review system,

Submit your manuscript here: <https://www.dovepress.com/transplant-research-and-risk-management-journal>

Dovepress

which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.