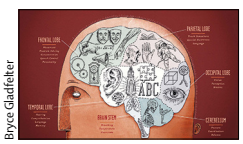
Cover artist for 2019



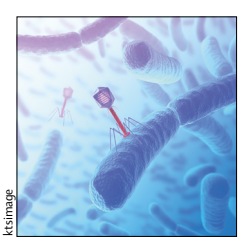
Bryce Gladfelter

The new artist creating the cover images for *The Lancet Infectious Diseases* for 2019 is Bryce Gladfelter, who replaces Kouzou Sakai from the Folio Illustration Agency. We are grateful to Kouzou for his imaginative take on the often difficult articles that were proposed as an inspiration for his images. Working with Kouzou has been a great pleasure for me, and we have tried over the months to include animals, our shared interest, in each cover. For 2019, Kouzou will be the cover artist for *The Lancet HIV*, and we wish him the best in his new adventure in *The Lancet* family.

Bryce currently resides in Philadelphia, PA, USA. An adventurer at heart, Bryce Gladfelter has traversed the Rockies on a llama and crossed paths with grizzlies in Alaska. He honed his skills in the arts during hours spent drawing on trains and buses, people watching in markets, and wandering the natural world. His original style and his imaginative creation of labels for beer bottles have caught our attention, and we look forward to a year of collaboration to create new distinctive covers for *The Lancet Infectious Diseases*.

Marco De Ambrogi
The Lancet Infectious Diseases

Phage therapy 2.0: where do we stand?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In *The Lancet Infectious Diseases,* Patrick Jault and colleagues[1] report the results of the PhagoBurn study investigating the efficacy and tolerability of a cocktail of bacteriophages against *Pseudomonas aeruginosa* in infected burn wounds.

To my knowledge, this is the first well designed randomised controlled trial on the efficacy of phage therapy of burn wounds in humans, which is a major achievement in itself. In the past decade, interest in phage therapy has been revived in the medical literature, which might be because of the increasing problem of multidrug-resistant bacteria and the promising results from case studies and not so well designed studies from the 1930s and 1940s. However, phage therapy has several drawbacks and many unsolved questions still exist that will make it difficult to estimate its value as a therapy for the future.

Safety is one of the main issues in the use of phages since they are living organisms. They consume specific bacteria by self-replication and they die when the bacteria are no longer available. But what if these phages could switch to consuming other so-called good bacteria?

The primary outcome of Jault and colleagues' study[1] was the time to reduction of bacterial burden in infected burn wounds by use of a topically administered cocktail 12 natural lytic anti-*P aeruginosa* bacteriophages compared with sulfadiazine silver as the standard of care. The authors found that the primary endpoint was reached in 144 h in the page therapy group versus 47 h in the standard of care group (hazard ratio 0·29, 95% CI 0·10–0·79; p=0·018). However, one should note that this outcome was only assessed in 25 participants, 12 in the phage therapy group and 13 in the standard of care group, and that wound healing, scarring, and quality of life were not outcome parameters.

Production and stability of a phage solution is still a problem. Off the shelf use of a universal active phage solution is far away and has the disadvantage of non-specific action to some, but not all, bacterial species. Even for specific strains of bacteria within one species, a specific active phage is needed, and testing for the specific phage needed by composing a so-called phagogram in advance would be very time consuming and expensive.

Frequently, many different bacterial species can be present in one colonised or infected wound, and up to 20% of pathogenic bacteria are resistant to commercially available phage solutions.[2] To date, the side-effects concerning the presence of endotoxins and other bacterial remnants in phage solutions are unclear, even if only applied topically. This issue also makes systemic treatment difficult or impossible. What is also unknown is the reaction of the human immune system to the phages; could their repeated application provoke an allergic reaction?

More needs to be learnt about what the effect of frequently used phage-based products are on the human