The authors reported no conflicts of interest.

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REPLY: ACROSS-THE-POND DIFFERENCES IN DRUG-RELATED ENDOCARDITIS

Reply to the Editor:

Chilvers and colleagues[1] suggest that there may be important differences in the prevalence of intravenous drug use (IVDU) between North America and Europe, which may in turn influence the prevalence of IVDU-related infective endocarditis (IE) requiring cardiac surgery. They further highlight that increasing IVDU in North America has led to a larger proportion of solid-organ transplantations from IVDU donors; such increases were not observed in Europe. Although there may be a true disparity in behavioral characteristics between North America and Europe in terms of IVDU and the risk of IE, these data are muddled by differences in the ascertainment of drug use in population-based surveys, which may create a misclassification bias. Even contemporary cardiac surgical databases fail to distinguish between IVDU and the use of other nonintravenous intoxicants such as cannabinoids and intranasal or inhaled stimulants, which clearly are associated with different risks of IE compared with intravenous drugs. Databases have also failed to differentiate between active drug users and the rehabilitated drug users with a history of IVDU. Although the prevalence of IVDU may indeed be lower in Europe, few would argue that IVDU-related IE is a daunting problem for the cardiac surgeon. The authors' own institutional data show that more than one-third of patients die at follow-up despite a mean age of 35 years, with one half of those deaths due to recurrent IE. These data are consistent with previous reports[2] and do not seem to be influenced by the side of the pond on which one lives. These data also highlight an urgent need to standardize the definition and timing of drug use across cardiac surgical registries and continents, to better isolate the impact of IVDU-related IE from other causes of IE, and better define the role of cardiac surgery in these challenging cases, especially for repeat offenders.

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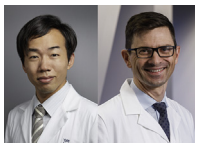

REPLY FROM AUTHORS: IDENTIFYING LESSONS THAT COULD BE GENERALIZED ACROSS DIFFERENT DISEASE BURDENS

Reply to the Editor:

We appreciate Chilvers and Clark's observation that the opioid epidemic is a unique phenomenon in the United States, and that the findings from our patient cohort might not reflect patients cared for in Europe.[1] The significant difference in the disease burden of infective endocarditis related to intravenous drug use (IE-IVDU) implies that the case volume encountered in Europe may differ.[2] This is an important consideration given the volume–outcome relationship, but the operative management itself might not differ significantly from that of non–IE-IVDU endocarditis, aside from the higher incidence of right-sided disease. More importantly, the long-term survival difference between IE-IVDU and non–IE-IVDU endocarditis seems to stem largely from the recurrence of disease[3] and use of addiction therapy,[4] and that may be where the most important difference in management lies. Therefore, we continue to advocate for robust multidisciplinary care of these patients and agree that resources should be allocated to further explore the optimal management of this complex population.

Although the differences in care processes and patient characteristics between the United States and Europe are important considerations when assessing generalizability, we believe that from a technical perspective, operative management might not differ significantly between patients with IE-IVDU and those with non–IE-IVDU, and our results indicated that the relationship between known risk factors and outcomes may be comparable to those of the non-IVDU cohort.[5] Therefore, many of the lessons learned in the management of patients with non–IE-IVDU are still valuable.

Given the multitude of differences in Europe and US healthcare, a transatlantic consortium to study patients with endocarditis seen across a wider range of care approaches may provide important insights that could inform the care for a wider patient population.

The authors reported no conflicts of interest.

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Finally, we should continue to acknowledge that endocarditis is an extremely heterogenous disease, and comparing outcomes or evaluating the efficacy of interventions face challenges owing to the limited classification conventions that make it difficult to compare apples to apples.

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