

Endocarditis: Why a multidisciplinary team referral is a matter of life and death

Written by The Life Science Feed Editorial Team · Edited by Mara Voss

Infective endocarditis remains a formidable challenge in cardiology, carrying significant morbidity and mortality despite advances in antimicrobial therapy and surgical techniques. The complexity of its presentation, diagnosis, and management often necessitates a coordinated effort beyond a single specialist. This is not merely a matter of convenience; it is a direct determinant of survival.

KEY TAKEAWAYS

- **The Pivot:** The strongest signal for improved survival in infective endocarditis is not a new drug or surgical technique, but rather the early involvement of a dedicated multidisciplinary endocarditis team.
- **The Data:** Observational data consistently show a substantial reduction in in-hospital and long-term mortality when patients are managed by such a team.
- **The Action:** Clinicians should prioritise prompt referral to an endocarditis team upon suspicion or diagnosis, ensuring comprehensive evaluation and tailored management strategies.

Infective endocarditis (IE) is a severe microbial infection of the endocardial surface of the heart, most commonly affecting the heart valves. Its clinical course is highly variable, ranging from subacute presentations to fulminant sepsis and rapid cardiac decompensation. The disease is characterised by vegetation formation, which can lead to valvular destruction, heart failure, systemic embolisation, and metastatic infection. Despite improvements in diagnostic imaging, such as echocardiography, and the availability of potent antibiotics, mortality rates remain high, often exceeding 20% in-hospital and reaching 40% at one year. This persistent challenge highlights the need for optimised management strategies. The standard of care for IE involves prolonged courses of intravenous antibiotics, often guided by susceptibility testing. Surgical intervention, typically valve repair or replacement, is indicated for specific complications such as severe heart failure, uncontrolled infection, large vegetations with high embolic risk, or perivalvular extension. Deciding when and how to intervene surgically, managing complex antimicrobial regimens, and addressing potential complications requires expertise from multiple disciplines. This inherent complexity has led to the concept of an 'endocarditis team', a multidisciplinary group of specialists dedicated to the care of these patients.

Defining the Endocarditis Team Approach

An endocarditis team typically comprises cardiologists, infectious disease specialists, cardiac surgeons, and often neurologists, intensivists, and microbiologists. The core principle is that collective expertise and coordinated decision-making lead to more timely and appropriate interventions. This collaborative model ensures that all facets of the disease, from microbiological eradication to haemodynamic stability and embolic risk assessment, are continuously

evaluated. The team approach facilitates adherence to guidelines and allows for rapid adaptation of treatment plans as the patient's condition evolves. For a comprehensive overview of modern cardiological practice, the Oxford Handbook of Cardiology remains an invaluable resource.

The specific composition and operational structure of an endocarditis team can vary between institutions, but the fundamental element is the regular, formal discussion of individual patient cases. This often involves weekly or bi-weekly meetings where all relevant specialists review clinical data, imaging, and microbiological results. Such discussions ensure that patients receive a holistic assessment, preventing delays in critical interventions like surgery or adjustments to antibiotic regimens. This integrated approach contrasts sharply with fragmented care, where individual specialists might manage aspects of the patient's condition in isolation, potentially leading to suboptimal outcomes.

The Mortality Signal

Observational studies and retrospective analyses consistently highlight a strong association between management by an endocarditis team and improved patient survival. Patients referred to or managed by these teams demonstrate lower rates of in-hospital mortality, as well as reduced mortality at 6 months and 1 year. This mortality benefit is seen across various patient populations, including those with prosthetic valve endocarditis, native valve endocarditis, and those with intravenous drug use-associated IE. The consistency of this signal across different cohorts and healthcare systems highlights its clinical significance.

The mechanisms behind this mortality reduction are multifactorial. Early and accurate diagnosis, facilitated by expert interpretation of echocardiograms and microbiological cultures, is a key factor. Timely initiation of appropriate antimicrobial therapy, often involving complex combinations and prolonged durations, is another. But the most impactful aspect appears to be the optimisation of surgical timing and patient selection. The decision to operate in IE is often fraught with challenges, balancing the risks of surgery in a critically ill patient against the risks of ongoing infection and complications. An endocarditis team can more effectively weigh these factors, leading to earlier and more appropriate surgical intervention when indicated, and avoiding unnecessary surgery when medical management is sufficient. This careful decision-making is particularly important in cases where patients present with neurological complications, where the timing of surgery can significantly impact outcomes.

Beyond Mortality: Other Clinical Benefits

Beyond the compelling mortality signal, management by an endocarditis team is also associated with other tangible clinical benefits. These include a reduction in the incidence of embolic events, particularly cerebral emboli, which are a major cause of morbidity and long-term disability in IE patients. Improved rates of vegetation eradication and lower rates of recurrent infection are also observed. The team approach can also lead to more efficient resource utilisation, reducing length of hospital stay and readmission rates, although these benefits are secondary to the primary goal of improving patient survival and reducing complications.

The benefits extend to the management of complex cases, such as those involving multidrug-resistant organisms or patients with multiple comorbidities. For instance, in patients with right-sided endocarditis, often associated with intravenous drug use, the team can coordinate not only medical and surgical management but also address underlying social and addiction issues, which are essential for preventing recurrence. This holistic approach is vital for managing a

disease that frequently affects vulnerable populations. The impact of team referral on endocarditis mortality has been a consistent theme in clinical discussions for years.

Where the Team Approach Falls Short

Despite the clear benefits, implementing a dedicated endocarditis team can be challenging. It requires significant institutional commitment, including dedicated time for specialists to meet and coordinate care. Not all hospitals, particularly smaller or rural centres, have the necessary breadth of subspecialty expertise to form such a team. This disparity in access to specialised care can lead to geographical variations in outcomes for IE patients. Transferring patients to tertiary centres with established endocarditis teams is often the best course of action, but this can be complicated by patient stability and logistical hurdles.

Another consideration is the lack of large-scale, randomised controlled trials directly comparing endocarditis team management with standard care. Most of the evidence supporting the team approach comes from observational studies, which, while consistent, are inherently susceptible to confounding by indication. Patients referred to a team might be inherently sicker, or conversely, only those with clear indications for complex care are referred. Still, the magnitude and consistency of the observed mortality benefit make a strong case for its widespread adoption. The principles of managing complex infections are well-covered in the Oxford Handbook of Infectious Diseases and Microbiology, which can guide clinicians in initial management.

The role of the endocarditis team is not static; it evolves with new diagnostic tools and therapeutic options. For example, the increasing prevalence of transcatheter valve interventions means that teams must now also include interventional cardiologists to manage infections on these devices. The ongoing challenge is to ensure that these teams remain agile, incorporating new evidence and technologies while maintaining their core multidisciplinary structure. The question for the future is not whether these teams are beneficial, but how to make them universally accessible and effective.

CLINICAL IMPLICATIONS

The evidence is clear: early referral to a multidisciplinary endocarditis team is the single most impactful intervention for patients with infective endocarditis. This is not a marginal gain; it is a substantial reduction in mortality that clinicians cannot afford to ignore. GPs and specialists in emergency medicine or general internal medicine should have a low threshold for suspecting IE and initiating the referral process, even before definitive diagnosis.

For hospitals without dedicated endocarditis teams, the imperative is to establish clear pathways for transferring patients to tertiary centres that do. Fragmented care, where a cardiologist manages the heart and an infectious disease specialist manages the bugs in isolation, demonstrably leads to worse outcomes. This is a systems-level problem that requires institutional commitment and resource allocation.

The industry, particularly those developing new antimicrobial agents or prosthetic valves, should recognise the vital role of these teams. The most effective drug or device will still underperform if the overarching management strategy is suboptimal. Investment in educational initiatives and support for multidisciplinary collaboration could yield greater returns than incremental improvements in individual therapies alone.

EDITORIAL & AI STANDARDS

AI tools are used solely to structure and summarise evidence from peer-reviewed primary sources. No AI-generated conclusions appear in The Life Science Feed without editor verification against the primary source.

REFERENCES

1. Li M, Kim JB, Sastry BKS, Chen M. Infective endocarditis. Lancet. 2024;404(10450):377-392. doi:10.1016/S0140-6736(24)01098-5
2. Hubers SA, DeSimone DC, Gersh BJ, Anavekar NS. Infective Endocarditis: A Contemporary Review. Mayo Clin Proc. 2020;95(5):982-997. doi:10.1016/j.mayocp.2019.12.008
3. Khaledi M, Sameni F, Afkhami H, et al. Infective endocarditis by HACEK: a review. J Cardiothorac Surg. 2022;17(1):185. doi:10.1186/s13019-022-01932-5
4. Del Val D, Panagides V, Mestres CA, Miró JM, Rodés-Cabau J. Infective Endocarditis After Transcatheter Aortic Valve Replacement: JACC State-of-the-Art Review. J Am Coll Cardiol. 2023;81(4):394-412. doi:10.1016/j.jacc.2022.11.028
5. Rajani R, Klein JL. Infective endocarditis: A contemporary update. Clin Med (Lond). 2020;20(1):31-35. doi:10.7861/clinmed.cme.20.1.1
6. Mulliken JS, Bainbridge ED. Infective Endocarditis. Med Clin North Am. 2025;109(3):667-681. doi:10.1016/j.mcna.2024.12.009

LICENCE & RIGHTS

© 2026 The Life Science Feed. All rights reserved. This content is produced for medical education purposes. It may not be reproduced, distributed, or transmitted without prior written permission from The Life Science Feed.

MEDICAL DISCLAIMER

This content is intended for healthcare professionals only and does not constitute medical advice. Clinical decisions must be made by qualified practitioners based on individual patient circumstances.

FOLLOW THE LIFE SCIENCE FEED

Instagram @lifesciencefeed **LinkedIn** linkedin.com/company/thelifesciencefeed

thelifesciencefeed.com