Heart valve clinics: an expanding role for the clinical scientists
validation of a framework for competency and certification

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BACKGROUND/INTRODUCTION:
Valvular heart disease (VHD) represents a significant burden on healthcare systems worldwide, necessitating specialised care through multidisciplinary valve clinics. However, there is a lack of a standardised training and certification framework for clinical scientists and specialist physiologists (CSSPs) working within specialist valve clinics (SVCs). This study aimed to design, implement and validate a competency framework dedicated to training and certifying valve CSSPs to enhance patient outcomes and establish standardised care.

METHODS:
A comprehensive competency framework was developed and implemented, consisting of two levels: Enhanced Valve Clinic Training (EVCT) and Advanced Valve Clinic Training (AVCT). The programme was trialled at Guy's Valve Clinic, London, over a 12-month period. Validation was undertaken through physicians (valve consultants), trainees and patient feedback, including multiple-choice questions, clinical skills assessments, and patient satisfaction surveys.

RESULTS
Nine CSSPs completed the EVCT and four the AVCT. All participants passed their certification examinations with scores ranging from 80% to 95%. The time to complete each programme averaged 6 months. After certification, clinical queries raised by EVCT trainees averaged 1.2 per session but dropped by 75% to 0.3 per session in the AVCT group, indicating greater confidence and independence in managing cases. Physicians (valve consultants) review of trainee-led cases led to additional tests or treatment changes in 23% of cases and referrals to physicians (valve consultant) clinics in 11%. Patient feedback was positive: 95% felt confident in the clinical scientists' knowledge, and 100% were satisfied with the clarity of their care plans and follow-up.

CONCLUSIONS:
The implementation of this training and certification framework demonstrated enhanced clinical outcomes and care delivery in SVCs. By advocating for formal recognition and accreditation of valve clinic training, this framework could serve as a model for national and international standardisation in valve care and clinical training.

Fig. 1 Development of a competency framework.

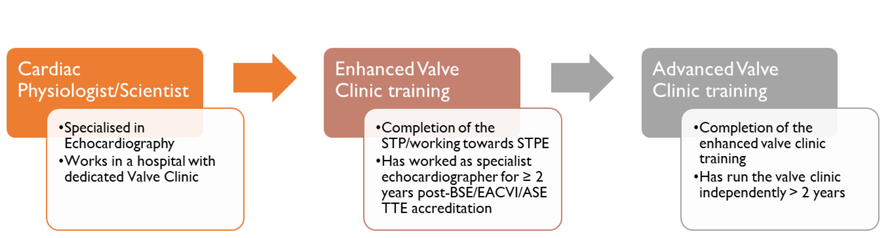


Fig. 1 Entry criteria into enhanced valve clinic training and advanced valve clinic training. ASE, American Society of Echocardiography; BSE, British Society of Echocardiography; EACVI, European Association of Cardiovascular Imaging; STP, Scientist Training Programme; STPE, Scientist Training Programme equivalence; TTE, transthoracic echocardiogram.

Fig. 2 Types of requests escalated to the case review meeting.

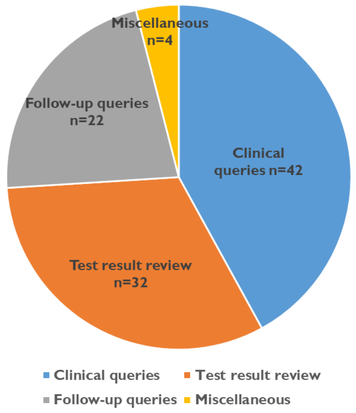


Figure 2: data was also collected on 100 consecutive queries listed for the weekly case review meeting by the CSSPs with the coordinating physician (Prof. Rajani). 42% clinical queries (42%) relating to patients' symptoms and the need for further investigation or physician (valve consultant) review. 32% test results review (echo reviews, blood tests, pulmonary function testing, Holter and ECGs)

Fig.3 Comparison of questions patterns between enhanced and advanced training groups

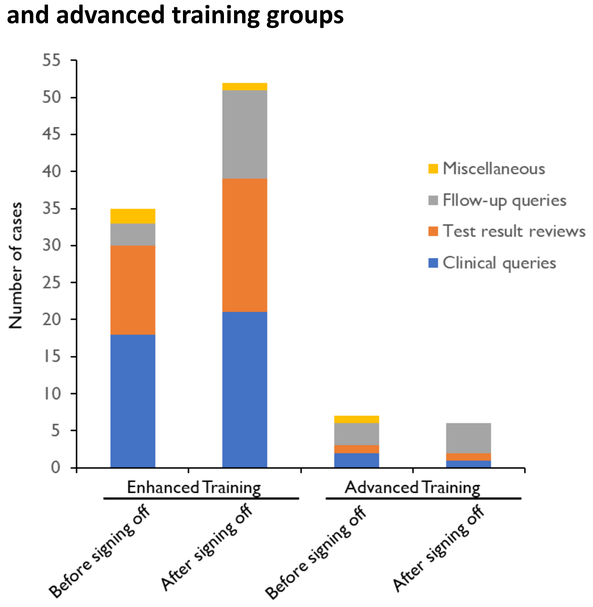
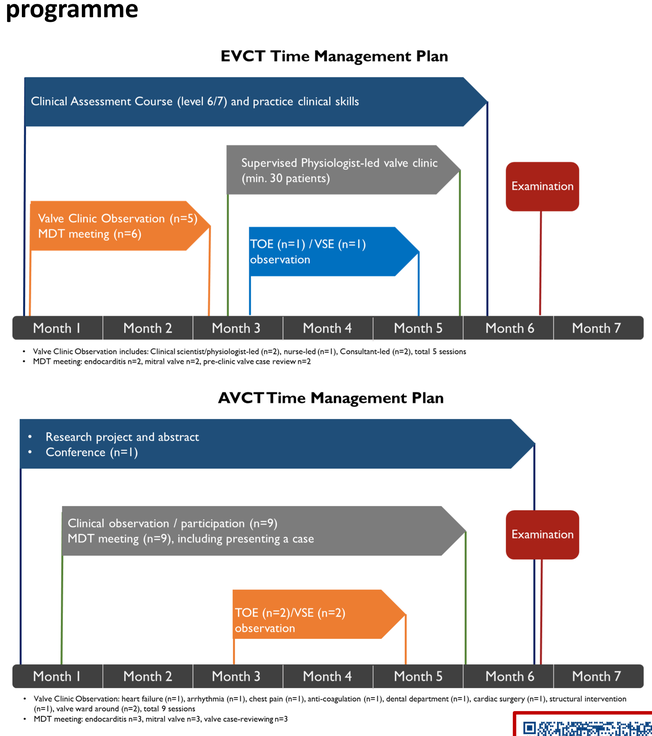


Figure 3: The graph illustrates that the ECVT group raised more questions in the first 3–6 months after sign-off and shifted focus from predominantly clinical and test result reviews to an integrated clinical, diagnostic and follow-up process. The ACVT group asked fewer questions compared with the ECVT group and were more focused on the follow-up management plan, indicating that the AVCT group has been more confident in managing the valve clinic mostly independently. AVCT, advanced valve clinic training; EVCT, enhanced valve clinic training.

Fig. 4 Time management plan for EVCT and AVCT programme



AVCT, advanced valve clinic training;
EVCT, enhanced valve clinic training;
MDT, multidisciplinary team;
TOE, transoesophageal echocardiogram;
VSE, valve stress echocardiogram.

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