Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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initially untreated and reported palpitations during at least 1 pregnancy. One woman (IV-11) developed extremely frequent VPBs at 6 weeks' gestation. Flecainide was commenced and was well tolerated, although dose escalation was required for symptom control. There were no fetal complications. A second woman (III-10) had increasing symptomatic ectopy and required hospital admission perinatally for arrhythmia monitoring.

p.R222Q *SCN5A* is a recurring pathogenic variant and one of the few causes of arrhythmic DCM for which specific gene-tailored therapy is available. Recognition of its distinctive phenotype and referral for genetic testing are paramount, because appropriate treatment may prevent death or ineffective heart failure intervention. Treatment with sodium channel-blocking drugs is beneficial, especially in patients with DCM. In our experience, this has proven to have sustained efficacy and safety.

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The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the Author Center.

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RESEARCH LETTER

Drive-Through Pacing Clinic

A Popular Response to the COVID-19 Pandemic

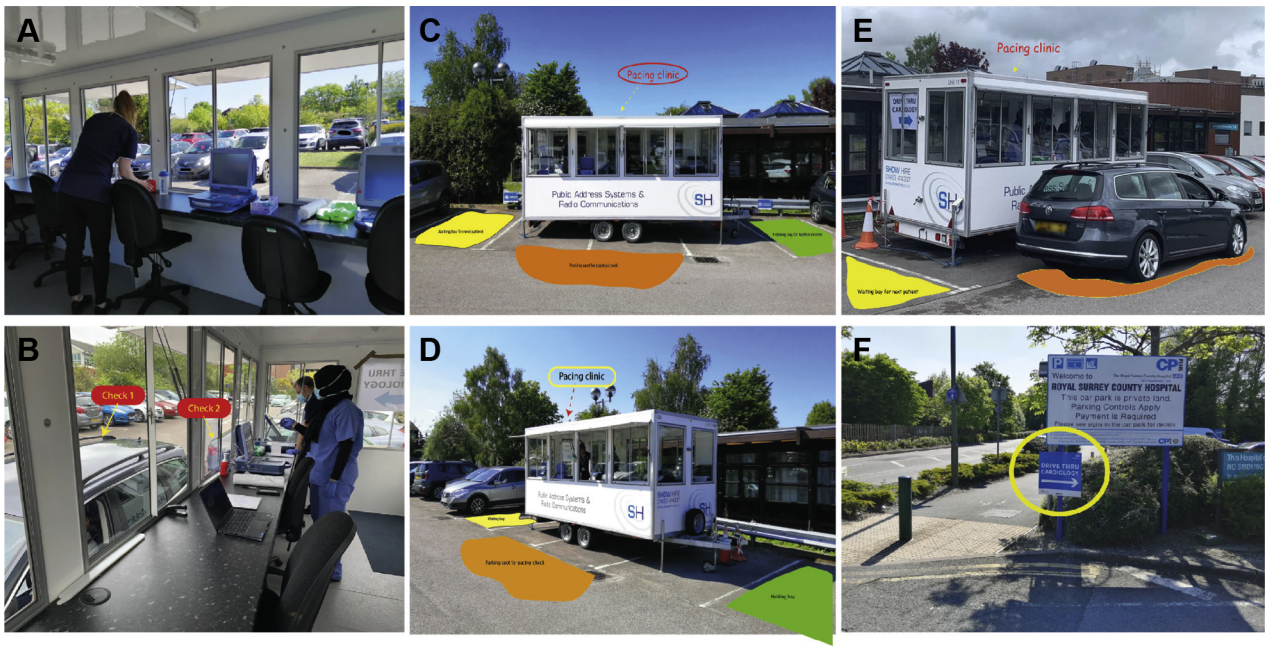
Coronavirus disease-2019 (COVID-19) infection has inflicted devastation globally. Control measures include social distancing. This is particularly relevant to the elderly and those at high risk. Follow-up of patients with cardiac implantable devices has generally been transferred from physical clinics to remote monitoring. However, older devices lack this capability, some households do not have mobile signal coverage, some patients prefer to maintain contact with health care professionals, and some problems require in-person review (1). Borrowing from the field of catering, we have adopted an innovative approach: The "drive-through" pacing clinic.

The drive-through concept is familiar. Patients remain in their automobile, parking parallel to a kiosk occupied by health care professionals in mandated protective equipment. They manage a programmer (**Figure 1**) and a defibrillator with external pacing capability. The programming wand contained within a sterile polyethylene sleeve is handed to the patient to enable interrogation (Video 1). A full pacing check (including thresholds) is performed without a surface electrocardiogram (ECG) using the device electrograms, and parameters are optimized.

Visual assessment of the implant site can also be performed through the car window, and patients are directed to a holding bay if further evaluation is required. The interrogation report is generated electronically and uploaded to a secure server. Appointments are limited to 10 per day.

Patients attending between April 13, 2020, and June 8, 2020 completed a questionnaire to quantify their satisfaction. Participants with prior experience of the conventional pacing clinic were asked to compare both services. The paired Student's *t*-test and chi-square test were applied; significance was set at $p < 0.05$. The study was approved by the research ethics committee.

FIGURE 1 The Drive-Through Pacing Clinic



(A) Internal view. **(B)** Two pacing checks being performed simultaneously. **(C)** External "frontal" view of the clinic. **(D)** An external "side" view of the clinic. **(E)** Pacing check being performed of the patient within the vehicle. **(F)** Signposting for the clinic **(yellow circle)** at the main hospital entrance. Video 1 shows the drive-through clinic in operation.

Over the study period, 316 patients (9 ± 1.7 per day; 62% men, age 78 ± 10 years) attended the drive-through clinic. From the 316 pacing checks, 66.8% were pacemakers; the remainder were cardiac resynchronization therapy devices (21.8%), implantable cardioverter-defibrillators (4.1%), and loop recorders (7.3%). Most were routine follow-up visits (84.5%). In total, 50 wound inspections were performed; 2 superficial wound infections were diagnosed and received antibiotics with resolution in both cases. A total of 7 patients were diagnosed with new atrial fibrillation and referred for anticoagulation. Device settings were adjusted in 51 (16.1%) cases, and 22 patients were referred to a physician clinic for a range of symptoms. Only 1 patient (0.3%) required surface ECG monitoring to aid with threshold measurement, and none required emergency electrical intervention.

The questionnaire response rate was 85.1%. Comparing the drive-through and conventional clinics, patients awarded on average (out of 6) excellent scores for signposting (5.36 vs. 5.5; $p = 0.07$), staff introductions (5.89 vs. 5.84; $p = 0.26$), maintaining patient dignity (5.94 vs. 5.94; $p = 0.86$), consultation thoroughness (5.93 vs. 5.95; $p = 0.39$), and answering all queries (5.89 vs. 5.85; $p = 0.14$). Responders expressed greater satisfaction with the provided instructions for the conventional clinic (5.59 vs. 5.7, respectively; $p = 0.024$) but were happier with the punctuality of the drive-through (5.93 vs. 5.84, respectively; $p < 0.01$). In the subset who experienced both types of device follow-up, most patients preferred the drive-through (57.1%) over the conventional format (21.7%; $p < 0.01$ [chi-square]), whereas the remainder (21.2%) had no preference.

Remote monitoring has been adopted widely during the pandemic, but is not suitable for all patients. The drive-through pacing clinic filled this gap without compromising biosecurity. The goals of pacing clinics (maximizing device longevity, preventing sudden failure) (2) were achieved as demonstrated by the equally high scores awarded to both clinic formats.

Comprehensive checks were accomplished in the full range of devices to the satisfaction of patients and without adverse incidents, indicating feasibility. Achieving a near full capacity of attendances (9/day) highlighted its desirability. The identification and treatment of 2 suspected device-related infections in this clinic shows that it has advantages over remote technology. The only technical challenge arose from the single patient requiring a

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surface ECG to better determine the pacing threshold. This patient was redirected to the in-hospital clinic for completion.

The drive-through format minimizes the risk of contracting COVID-19 without compromising care. Patients expressed satisfaction that staff introduced themselves by name, acted respectfully, and maintained privacy, hallmarks of a well-run clinic from a patient perspective (3). Punctuality was excellent and well-appreciated, although partly attributable to the 10/day patient visit limitation.

This study was nonrandomized and was performed during a pandemic, when patients were favorably disposed toward health care services. Cardiac arrests would be more difficult to treat in a car than in a clinic room; fortunately, these are rare in the pacing clinic, and none occurred in this experience.

The drive-through pacing clinic is feasible and effective, with some advantages over remote monitoring during the pandemic.

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APPENDIX For a supplemental video, please see the online version of this paper.