

Targeted atrial fibrillation detection in COVID-19 vaccination clinics

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Atrial fibrillation (AF) is estimated to cause at least a quarter of all ischaemic strokes, which tend to be more likely to result in death or significant impairment than strokes from other causes. The European Society of Cardiology recommends opportunistic detection of AF by pulse taking or electrocardiographic (ECG) rhythm strip in people aged ≥ 65 years, who are at particular risk of AF-related stroke,¹ so that if AF is detected they can be considered for oral anticoagulation therapy. Improved identification of AF and treatment with oral anticoagulants of those at high risk has reduced the incidence of AF-related stroke.² Despite considerable progress in detecting AF in recent years about 250 000 people in England are estimated to have undetected AF. It is estimated that one stroke will be prevented in the first year for every 5 000 people aged ≥ 65 years offered a rhythm check (Figure 1).

The coronavirus 19 (COVID-19) pandemic has had a negative impact on the identification of AF. New cases are often detected opportunistically through face-to-face primary care appointments, but these have reduced significantly during the pandemic due to social distancing measures and the increased adoption of remote consultation, which is likely to be a long-term change. A study in a deprived urban population in the UK reported a 43% reduction in new circulatory system diagnoses—including but not limited to AF—and a 30–52% decrease in prescribing of new cardiovascular medications between March and May 2020,³ whereas a Danish study reported a 47% decrease in registered new-onset cases of AF during Denmark’s first national lockdown.⁴ Patients with cardiovascular

disease (CVD) and related comorbidities are also more likely to be severely affected by COVID-19 and to have worse outcomes, including a higher risk of mortality.⁵ In the absence of conventional case-finding opportunities during and potentially after the pandemic, alternative routes for identification of people with AF are needed.

The large numbers of people aged ≥ 65 years attending clinics for COVID-19 vaccinations, including potential booster injections, provides an unprecedented opportunity for targeted AF detection in this high-risk cohort. Some COVID-19 vaccination clinics in the UK developed various approaches to targeted AF detection during the initial phases of the vaccination programme. A generic pathway for detection of AF based on the experiences and learnings across these clinics involves the following steps:

1. Identification of target group
2. Information and consent
3. Adherence to infection control measures
4. Performing the rhythm check
5. Explaining the result
6. Communicating positive results to GP or other nominated clinician.

Once the target group has been identified—typically patients aged 65 years due to the increased risk of stroke in this age group versus the benefits of anticoagulation in diagnosed AF—the pathway involves detecting an irregular pulse through a simple pulse check or a range of detection devices such as one-lead ECG, blood pressure monitors that detect an irregular pulse, or smartphone apps that use photoplethysmography. Pilot clinics that elected to use a single-lead ECG chose from a variety of available single-lead devices, which are simple to use by non-clinical or volunteer staff and have similar sensitivity to manual pulse checks but higher specificity, leading to fewer false positives. People aged ≥ 65 years attending clinics for

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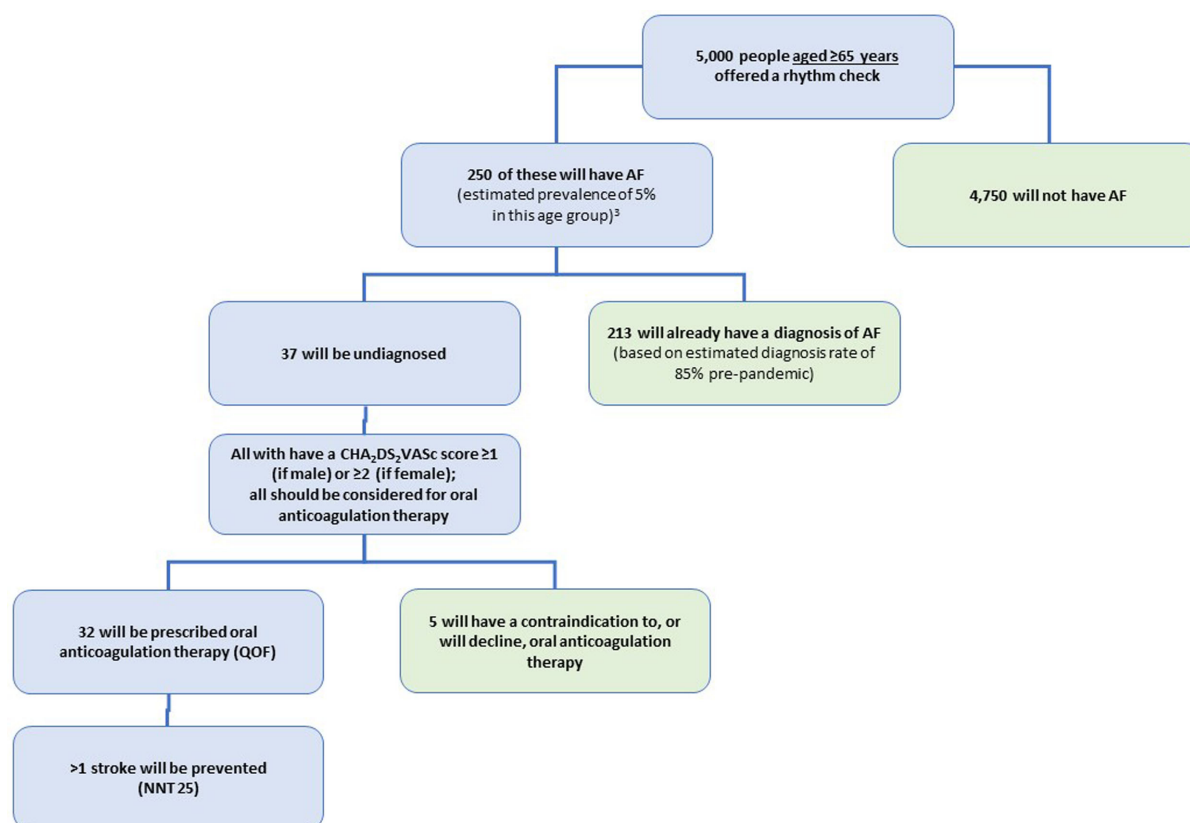


Figure 1 For every 5 000 people aged ≥ 65 years offered a rhythm check, one stroke is estimated to be prevented in the first year. AF, atrial fibrillation; NNT, number needed to treat; QOF, quality outcomes framework.

COVID-19 vaccination are given information about the planned AF check before their appointment or when they arrive at the clinic, with verbal consent obtained before the rhythm check is carried out if they are not known to already have AF. In some centres, vaccinators perform the rhythm check while asking questions prior to giving the vaccine; in other centres, volunteers from the UK's AF Association offer a rhythm check after the vaccination has been administered. Suspected AF after a single-lead ECG is confirmed via 12-lead ECG, in line with recommendations from the National Institute for Health and Care Excellence (NICE) in the UK. If AF is suspected after a manual pulse check, a second rhythm check with a single-lead ECG device has generally been used to reduce large numbers of false positives which may be generated by manual pulse checks referred for 12-lead ECG.

Two potential concerns were expressed by clinic staff and senior NHS management before introduction of AF checks. The first was that this would reduce the capacity of the clinics to administer vaccinations at high volume. Experience to date has not shown this to be the case through clear pathway design and ensuring assessments do not interfere with vaccine staff workflow practices. The second concern, particularly in the early stages was infection control and the potential risk of transmission of COVID-19. Cleaning protocols for single-lead devices are required with the support and approval

of local infection control teams with no concerns raised from the pilot clinics studied to date.

Once AF is detected, clear arrangements for further management need to be in place, with the diagnosis and next steps explained to the patient, supported with an information leaflet. In UK clinics the patient has generally been referred to their GP, cardiovascular nurse, or pharmacist in accordance with an agreed pathway. Arrangements include the vaccination clinic directly informing the GP; providing the patient with a letter to share with their GP; or referral to a defined secondary care clinic, after which the patient is transferred to their GP for continued care. Protocols need to be in place for further assessment of non-AF-related bradycardia or tachycardia, detected by single-lead ECG devices. In some pilot sites, primary care teams are offered additional support with anticoagulation, including initiation of drugs and counselling patients on the risks and benefits of anticoagulation and the importance of adherence.

These additional interventions for AF detection during vaccination clinics provide an excellent opportunity to offer CVD prevention advice. Some centres have taken the opportunity to provide information on CVD prevention through handing out A5 cards (an example flyer) or showing CVD promotional material on screens in waiting areas. Indeed, as NHS Health Checks that identify other CV risk factors have been paused or delayed during the pandemic, some

vaccination clinics that embedded targeted AF detection have chosen to build further upon the model, also checking blood pressure and glycosylated haemoglobin. In one clinic, 10 potential cases of AF were identified among 2 259 patients, and 58 new cases of high blood pressure were identified among 459 people who were given a full NHS health check or general health assessment ($n = 230$) or had their blood pressure checked ($n = 229$).

A complete return to previous approaches to detect and manage AF and other CVD risk factors at the population level is unlikely in the short term given the shift to virtual consultation in primary care. New approaches will be needed to identify and treat people at increased CVD risk, particularly for communities with higher levels of socioeconomic deprivation, ethnic minority groups, and those with severe mental illness. Further work is needed to evaluate the effectiveness and cost-effectiveness of the different models of targeted AF detection in COVID-19 vaccination clinics. However, this generic pathway provides a pragmatic approach to targeted AF detection during the pandemic, which is feasible and acceptable for clinics and patients, can be adapted to suit local settings, and can be expanded to identify other risk factors for CVD.

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Data availability

Data provided by NHS Frimley CCG. Data available on request to the corresponding author with the permission of NHS Frimley CCG.

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