Implementation and Evaluation of a Standardized Non–Vitamin K Oral Anticoagulant (NOAC) Patient Safety Alert Card Across the Northern Region of England

Honey Thomas1 and Louise Smyth2

Abstract
Many patients are prescribed anticoagulants. Newer non–vitamin K oral anticoagulants, NOACs, were launched in 2008 and are increasingly commonly used. However, they may still be unfamiliar to patients and health care professionals. It is mandated by the National Patient Safety Agency and European Society of Cardiology to provide written safety information for patients receiving anticoagulants. We developed a standard patient alert card with the support of the North of England Strategic Clinical network (NESCN) to clearly provide key safety information for patients and health care professionals. This is the only card in the United Kingdom that is used over such a wide geographical area. We recognized that this would avoid duplication of work devising a similar card across all the sites in primary and secondary care. Given that staff and patients commonly move about the region it would also lead to better ease of recognition. The NESCN card was developed with input from all the key stakeholders, including cardiology, stroke, hematology, acute medicine, primary care, and patient groups. It was launched in 2015 across the Northern region, which includes over 3 million people. It was distributed to general practitioners (GPs), primary and secondary care pharmacists. Electronic and face-to-face education was carried out alongside to pharmacists, GPs, and hospital physicians. We gathered patient and clinical staff feedback regarding the card and found the alert card was widely embedded within practice across the region and patient feedback was good. The evaluation shows a simple and inexpensive intervention delivered with no formal funding can address this patient safety concern. We have engaged with Clinical Commissioning Groups and secondary care trusts in the region to ensure the legacy of the project. In response to requests from other regions and organizations, the card has been widely shared and implemented across many areas of the United Kingdom.

Keywords
community health, disease management, health literacy, long-term care, patient-centeredness, primary care, quality improvement

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Non–vitamin K oral anticoagulants (NOAC, also direct-acting oral anticoagulants or DOAC) provide an alternative to vitamin K antagonists (warfarin) and are an effective treatment for the prevention of thromboembolism. The use of NOACs in the setting of stroke prevention in atrial fibrillation and prevention of venous thromboembolism has been supported by the National Institute for Health and Care Excellence.1 The standardized dosing regimen, avoidance of regular coagulation monitoring, high levels of efficacy with favorable bleeding risks have led to widespread adoption of these newer drugs.2,3 However, patients are at risk of serious harm if they fail to receive clear, consistent written instructions about these medications; how to take
Figure 1. NESCN Non vitamin K oral anticoagulant alert card.
them safely and what to do if an adverse event occurs. International guidance\(^4\) and the (former) National Patient Safety Agency\(^5\) both state that all patients receiving anticoagulation should receive written information.

Unlike warfarin, there is no standard patient tool for NOACs, and these newer drugs may also be less familiar to patients and health care professionals. Pharmaceutical industry drug specific cards are variable in content and not easily recognizable. We developed a card for use across primary and secondary care in the Northern England Strategic Clinical Network (NESCN). In the absence of any national standard tools, we recognized the importance of an integrated, collaborative regional approach with the aim that this could be a basis for a national tool.

**Methods**

A small team from the NESCN engaged with multiple stakeholders including patient groups. The card developed was easily recognizable (Figure 1) with a color similar to warfarin books (bright yellow) and sized for a purse/wallet. It was launched in April 2015 with supporting educational material and provided to hospital and community pharmacists and primary/secondary care clinicians. A supply of cards was sent to all community and secondary care pharmacies to be issued when the patient received the medication. There was no specific project funding with printing and distribution costs covered informally by NESCN. Subsequent evaluation of the project was supported with an educational grant from Bayer.

The evaluation project considered both the efficacy of our implementation strategy and specific feedback about the card from patients and health care professionals (HCPs). We recruited 8 general practices (GPs) representative of the region’s Clinical Commissioning Groups (CCGs) to identify the last 100 patients commenced on an NOAC. These patients were sent a questionnaire addressing if and where they had received an NOAC Alert Card and their feedback about the card. All patient data was anonymized. An email survey was sent to all GPs, secondary care physicians, and representatives from secondary care pharmacy evaluating their use and opinion of the cards.

**Results and Discussion**

A total of 800 patients were approached with 496 responses returned (62%). In all, 65% received an alert card (62% of these had received our NESCN card); 43% received their card in secondary care, 30% from community pharmacies, and 27% from GPs. Figure 2 summarizes the key patient feedback for the NESCN card. The free text comments were largely positive suggesting patients found the card easy to use, informative, and reassuring.

Of the HCP respondents, 57% of GPs (n = 21) and 40% of physicians (n = 81) were aware of the cards. A total of 92% of secondary care pharmacies (n = 26) had the cards with 91% using them always/often. The card received predominantly positive feedback.

The HCP response rates were low due to the usual challenge of sufficient engagement with electronic surveys; while possible uptake bias may limit the conclusions. However, the patient feedback is more robust and suggests the card was well received and shows encouraging levels of
use. However, 35% still are not receiving any alert card, which is concerning.

Our feedback allowed us to consider improvements to the card and our implementation strategy. More patients had received the card from their GP directly than had been anticipated; perhaps related to cards not being issued by community pharmacies. This may be related to challenges we had communicating with these individual pharmacies, typified by the difficulty we had contacting them for the project evaluation.

Future Direction

We are working with local CCGs to ensure an ongoing supply of cards for primary care. Other organizations can purchase additional cards as required. We have been approached by over 180 organizations in the United Kingdom (including GPs, CCGs, other networks and National Health Service [NHS] Trusts); and organizations overseas requesting permission to adopt the NESCN card and have shared this freely. A smartphone application is in the evaluation phase. We have collaborated with various departments within NHS England since 2014 with the aim of developing a standardized national card. However, despite widespread enthusiasm, there are significant organizational hurdles preventing the rapid implementation of a simple and inexpensive tool for patient safety and no national card is yet available.

Declaration of Conflicting Interests

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ORCID iD

Honey Thomas https://orcid.org/0000-0003-4011-8858

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