# Impact of Patient Beliefs and Educational Counselling on NOAC Adherence

Matthew Galway

Cardiology Clinical Pharmacist

Belfast Health and Social Care Trust

# Presentation Structure

- Background
- Study Design
- Results
- Conclusions and Future Vision

# Background

- Non- vitamin K oral anticoagulant (NOAC) use is increasing
- Major advantages over vitamin k antagonists (warfarin)
- Lack of INR monitoring leads to less frequent patient review
- Concern that poor adherence may therefore go undetected[1]
- Anticoagulant adherence is vitally important
- Adherence to medication in other chronic conditions known to be low[2]

# Background

- NOAC adherence rates not extensively researched in literature
- Some studies have reported 12-43.3% of patients are poorly adherent to their NOAC treatment[3,4]
- Lack of specific United Kingdom & Ireland data on adherence

# Background

- Various factors known to affect medication adherence (World Health Organisation 2003)[5]
- Modifiable factors include:

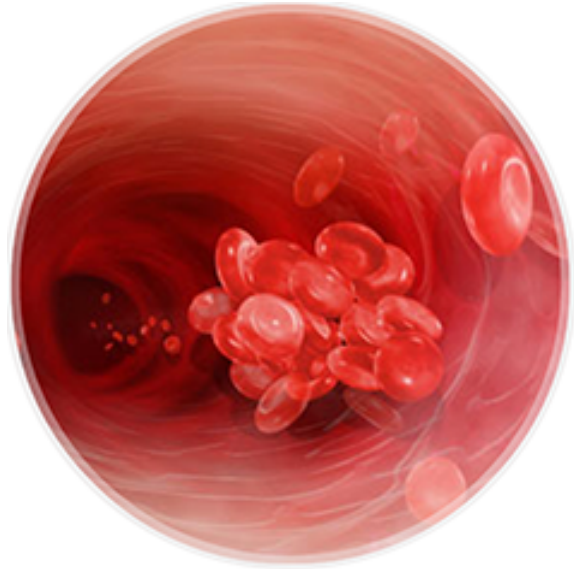
**(i) Patient Medication Beliefs**

**(ii) Educational Counselling on Medication**

- Both factors have been shown to have an impact on medication adherence
- However, investigation into NOAC medication is lacking

# Background

- National Institute for Healthcare and Clinical Excellence (NICE) list essential components of NOAC counselling[6]
- Belfast Health and Social Care Trust (BHSCT) manage large numbers of NOAC patients
- Current BHSCT safety initiatives based on Department of Health Objectives in 'Quality 2020'[7] and 'Health and Wellbeing 2026'[8]
- Thrombosis UK mission focused on research to improve thrombosis awareness and patient safety



# Study Design

- **Aims**

- Collect information from representative NOAC patient sample
- Investigate each patient's medication beliefs and NOAC educational counselling
- Evaluate the impact each has on NOAC adherence
- Use findings to enhance BHSCT NOAC management

# Study Design

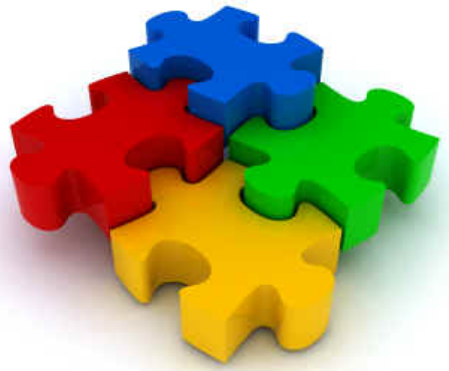
- **Objectives**

- Develop a suitable questionnaire
- Analyse links between beliefs/educational counselling and adherence statistically
- Formulate recommendations for service improvement

# Study Design

**Methodology**

- Cross-sectional, questionnaire study
- Sample taken from Royal Victoria Hospital (RVH) inpatients, and Direct Current Cardioversion (DCC) outpatients
- Data collection: 3rd July 2017 – 1st October 2017
- Clinical pharmacists and DCC staff recruited 54 participants
- Inclusion/exclusion criteria



# Study Design

**Questionnaire**

- Four sections

(a) General Participant Information

(b) Educational Counselling

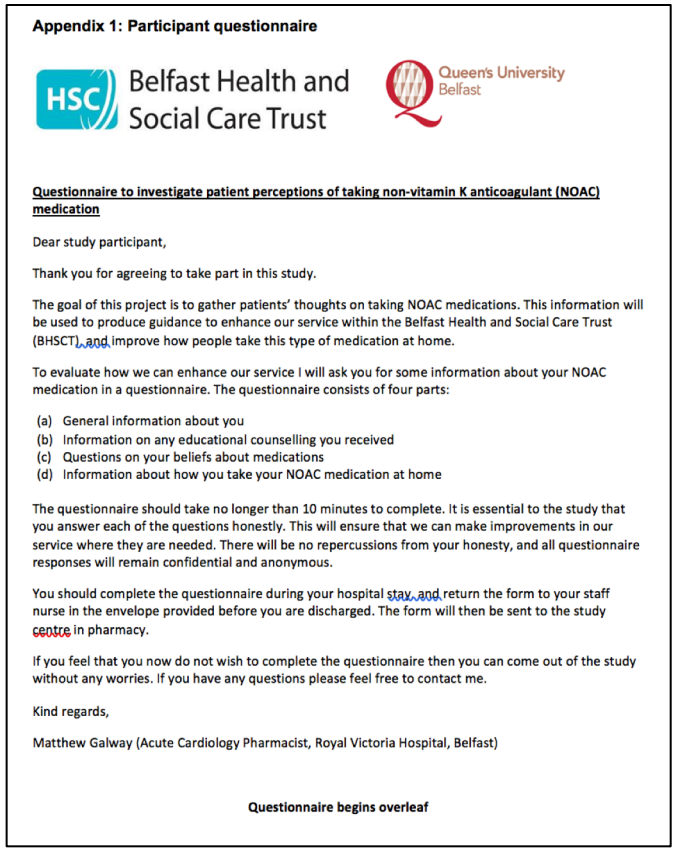
(c) Beliefs About Medications

(d) Medication Adherence

- Validated templates used:

1. Beliefs About Medications Questionnaire BMQ[9]
2. Medication Adherence Rating Scale MARS[10]

- All information self-reported



**Appendix 1: Participant questionnaire**

HSC Belfast Health and Social Care Trust

Queen's University Belfast

**Questionnaire to investigate patient perceptions of taking non-vitamin K anticoagulant (NOAC) medication**

Dear study participant,

Thank you for agreeing to take part in this study.

The goal of this project is to gather patients' thoughts on taking NOAC medications. This information will be used to produce guidance to enhance our service within the Belfast Health and Social Care Trust (BHSCT), and improve how people take this type of medication at home.

To evaluate how we can enhance our service I will ask you for some information about your NOAC medication in a questionnaire. The questionnaire consists of four parts:

(a) General information about you
(b) Information on any educational counselling you received
(c) Questions on your beliefs about medications
(d) Information about how you take your NOAC medication at home

The questionnaire should take no longer than 10 minutes to complete. It is essential to the study that you answer each of the questions honestly. This will ensure that we can make improvements in our service where they are needed. There will be no repercussions from your honesty, and all questionnaire responses will remain confidential and anonymous.

You should complete the questionnaire during your hospital stay, and return the form to your staff nurse in the envelope provided before you are discharged. The form will then be sent to the study centre in pharmacy.

If you feel that you now do not wish to complete the questionnaire then you can come out of the study without any worries. If you have any questions please feel free to contact me.

Kind regards,

Matthew Galway (Acute Cardiology Pharmacist, Royal Victoria Hospital, Belfast)

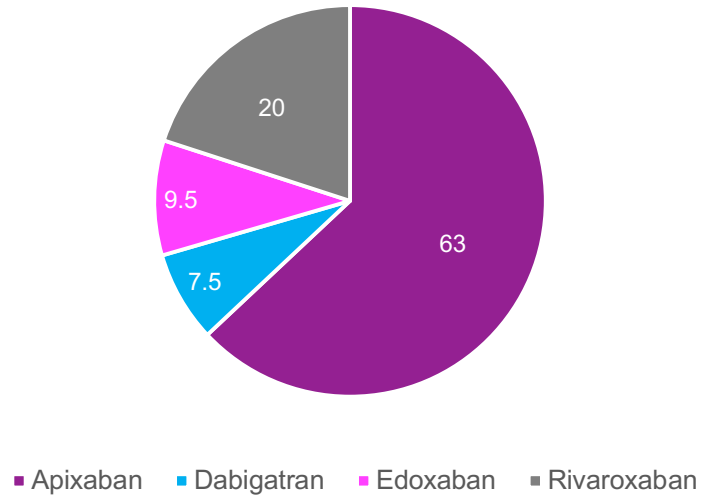
**Questionnaire begins overleaf**

# Results

## (a) General Participant Information

- 54 participants (67% male)
- 65% RVH inpatients; 35% DCC patients
- Predominant age grouping 65-79 years old (47%)

Figure 1: Percentage (%; n=54) of Current Participant NOAC Prescription



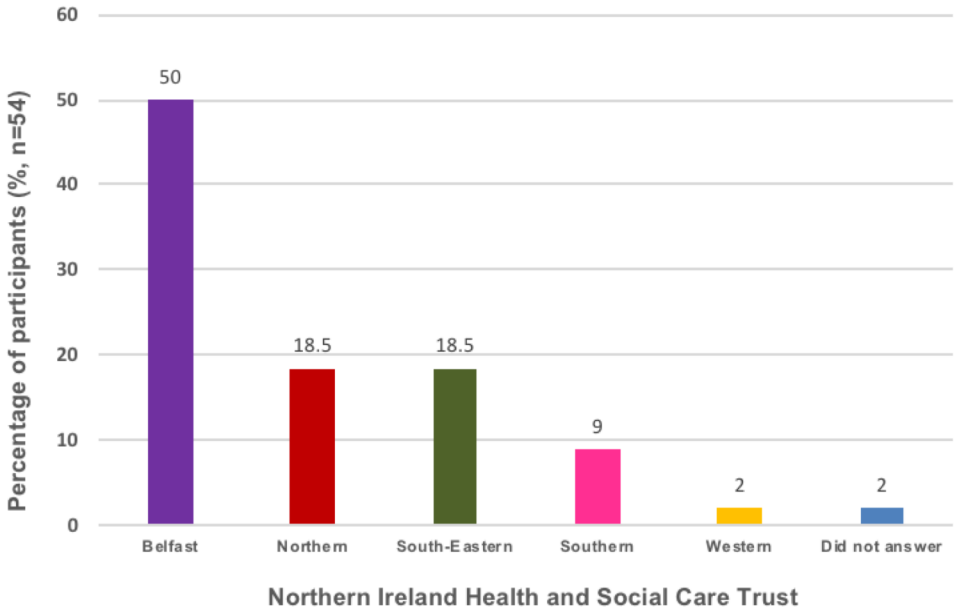
# Results

## (a) General Participant Information

- Where NOAC commenced: 59% local hospital; 24% outpatient clinic; 11% GP
- Indication: 87% AF; 7.5% DVT/PE treatment; 5.5% unsure
- 26% unaware of planned treatment duration

Figure 2: Local Northern Ireland Health and Social Care Trust Provider,

Based on Participant Postcode

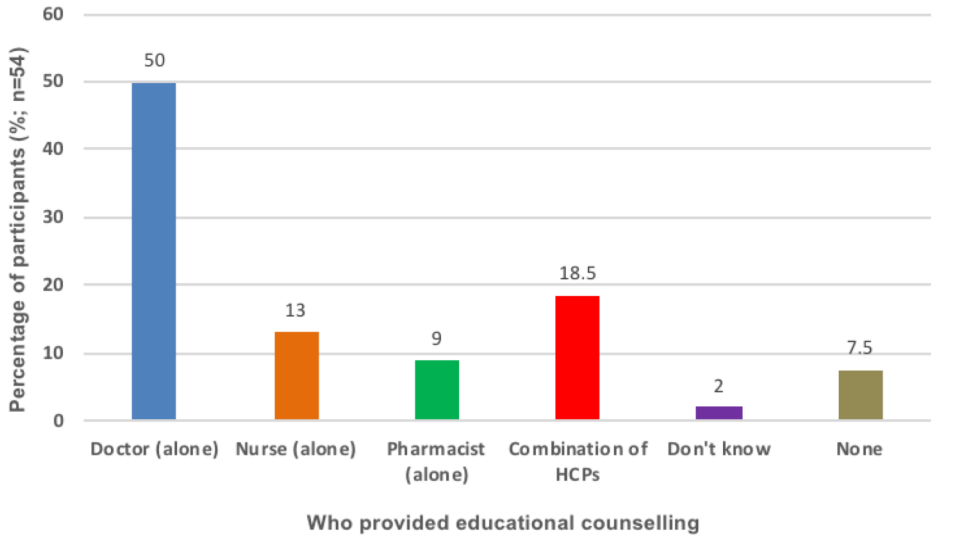


# Results

## (b) Educational Counselling

- 7.5% state no counselling received
- Only 22% received all recommended components
- 57% carry alert card at all times

Figure 3: Percentage of Which Healthcare Professional (HCP) Group Provided Initial NOAC Educational Counselling



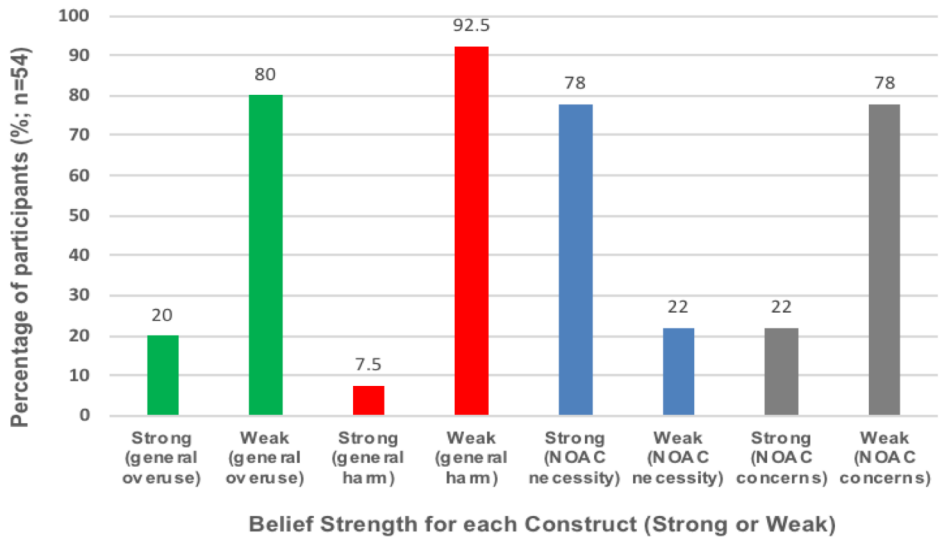
# Results

## (c) Beliefs About Medications

- Results showed a positive median necessity-concerns differential (NCD) score of +5

- Data then broken down to see impact each construct had on NOAC adherence

Figure 4: Percentage of Participants with Strong or Weak Beliefs for Each Belief Construct



# Results

**(d) Medication Adherence**

- Participants labelled as non-adherent if MARS score= ≥1
- Adherence self-reported for preceding 4-week period
- 9% of participants non-adherent with NOAC medication
- Educational counselling did not significantly affect NOAC adherence rates, or beliefs about medications

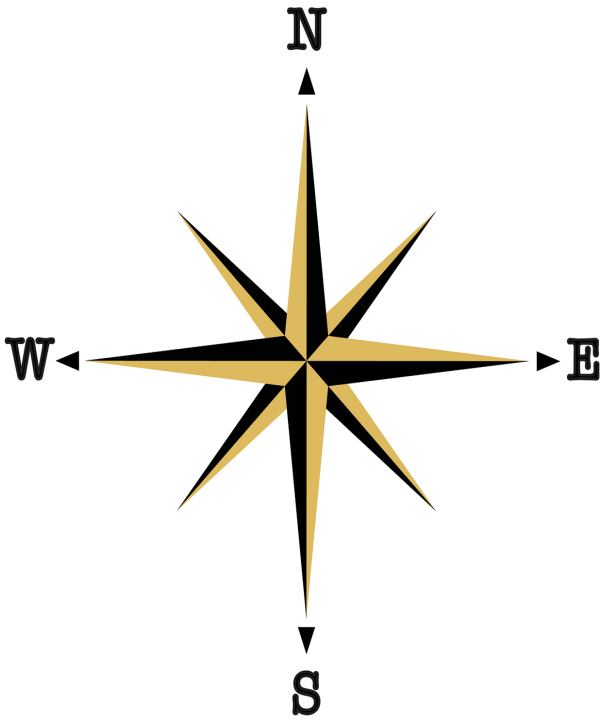
# Results

## (d) Medication Adherence

- Statistically significant association between **general medication harm** belief strength, and NOAC adherence grouping ($p = 0.0039$)
- For **NOAC specific concerns**, participants in the low-adherence group had significantly higher belief scores ($p = 0.044$)
- No other statistically significant adherence links with medication beliefs discovered

# Conclusions and Future Vision

- NOAC adherence requires improvement
- Various factors shown to influence compliance
- Acting as a pilot study, this work has provided direction
- Notable study limitations



# Conclusions and Future Vision

- Expanded Health Belief Model[11] used to generate NOAC management recommendations

- Further research required on a larger scale

| EHBM Construct | Recommended Intervention |
|---|---|
| **Susceptibility** | - Promote the benefit of complete NOAC adherence<br>- Provide information on the potential consequences of poor adherence |
| **Severity** | - Provide education on condition, treatment choice, and duration<br>- On initiation, provide verbal, and written NOAC information |
| **Benefits** | - Discuss the rationale for medication use overall |
| **Barriers** | - Discuss, and address, any personal medication adherence issues<br>- Discuss, and address, general medication harm concerns<br>- Discuss, and address, NOAC-specific concerns<br>- Consider compliance aids if necessary<br>- Adjust timing of medication dosing to suit individual patient needs |
| **Cues to Action** | - Discuss NOAC adherence with patient during inpatient and outpatient review<br>- Suggest dosing reminders<br>- Suggest personal dosing plans based on patients' daily routine<br>- Signpost patients to places where they can request further NOAC information after discharge (community pharmacy, NHS choices, GP) |
| **Self-efficacy** | - Improve patient self-confidence in ability to adhere with NOAC regime<br>- On initiation, ask patient to repeat important counselling points to promote understanding<br>- Promote carrying NOAC alert card |

# Questions?


BLOOD
CLOT VTE
THROMBOSIS
PAIN
CARE
STOP DVT
#LetsTalkClots

# NOAC Management in GP Practice

- Jackalyn Lightbody, Practice Based Pharmacist, Dromore
- Enhanced role of Practice Pharmacists in NOAC monitoring
- All new NOAC patients identified and contacted for review within 1 month
- All NOAC patients attend clinic for review at least once annually
- Blood results checked every time NOAC reissued
- Changes  in treatment are recommended based on these findings

# NOAC Management in GP Practice

- Routine monitoring includes
- Age
- Weight
- Indication
- Duration
- Dose
- CrCl
- Serum Creatinine
- FBC
- Interacting medications
- Discussion regarding compliance, adverse effects, and any other issues with NOAC use

- This illustrates the role of pharmacists in ensuring suitable NOAC use in primary care

# References


1. RODRIGUEZ, R.A., CARRIER, M., WELLS, P.S., (2013) Non-adherence to new oral anticoagulants: a reason for concern during long-term anticoagulation? Journal of Thrombosis and Haemostasis, 11(2), pp. 390-394.

2. MEICHENBAUM, D. AND TURK, D.C. (1987) Facilitating treatment adherence: a practitioner's handbook, New York: Plenum Press.

3. SCHULMAN, S., SHORTT, B., ROBINSON, M., EIKELBOOM, J.W., (2013) Adherence to anticoagulant treatment with dabigatran in a real-world setting. J Thromb Haemost. 11(7), pp. 1295-1299.

4. SHORE, S., HO, P.M., LAMBERT-KERZNER, A., GLORIOSO, T.J., CAREY, E.P., CUNNINGHAM, F., LONGO, L., JACKEVICIUS, C., ROSE, A. AND TURAKHIA, M.P., (2015) Site-level variation in and practices associated with dabigatran adherence. JAMA, 313(14), pp. 1443-1450.

5. WORLD HEALTH ORGANISATION- WHO (2003). Adherence to long-term therapies - Evidence for action [Online]. Available at: http://www.who.int/chp/knowledge/publications/adherence_full_report.pdf (Accessed 24th August 2017).

6. NICE: NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE (2016) Anticoagulation- oral: Clinical Knowledge Summary [Online]. Available at: https://cks.nice.org.uk/anticoagulation-oral#!topicsummary (Accessed: 6th August 2017).

7. DHSSPSNI- NORTHERN IRELAND DEPARTMENT OF HEALTH, SOCIAL SERVICES, AND PUBLIC SAFETY (2017b) Quality 2020 - a ten year strategy to protect and improve quality in health and social care in Northern Ireland, Available at: https://www.health-ni.gov.uk/publications/quality-2020-ten-year-strategy-protect-and-improve-quality-health-and-social-care (Accessed: 3rd September 2017).

8. DOHNI NORTHERN IRELAND DEPARTMENT OF HEALTH, SOCIAL SERVICES, AND PUBLIC SAFETY (2017a) Health and Wellbeing 2026 - Delivering Together, Available at: https://www.health-ni.gov.uk/publications/health-and-wellbeing-2026-delivering-together (Accessed: 15th April 2018).

9. HORNE, R., WEINMAN, J., HANKINS, M., (1999) The beliefs about medicines questionnaire: The development and evaluation of a new method for assessing the cognitive representation of medication, Psychology and Health, 14(1), pp. 1-24.

10. THOMPSON, K., KULKARNI, J., SERGEJEW, A.A., (2000) Reliability and validity of a new Medication Adherence Rating Scale (MARS) for the psychoses. Schizophrenia Research, 42(3), pp. 241-247.

11. STRECHER, V. AND ROSENSTOCK, I. (1997) 'The Health Belief Model'. In: Glanz. K., Lewis, F.M., Rimer, B.K. (Eds.). Health Behavior and Health Education: Theory, Research, and Practice. Jossey-Bass, San Francisco, USA, pp. 41–58.