



## A review of bleeding events associated with anticoagulants with a primary focus on transitions of care

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### INTRODUCTION

- **Anticoagulants** are high risk medications which can cause clinically significant harm when used inappropriately.<sup>1</sup>
- **Transition of care (ToC)** is the continuity of care during movement from one healthcare setting to another.<sup>2</sup>
- World Health Organization's goal is to assess nature of avoidable harm and to strengthen monitoring systems with a focus on ToC to protect patients from harm.<sup>2</sup>

### AIM

**Aim** - To review major bleeding events due to anticoagulants with a primary focus on transitions of care

#### Objectives

- To describe the burden of major haemorrhagic events
- To identify omitted vital information about anticoagulants on ToC documents and characteristics of patients who are at risk during ToC

### METHOD

- Records of patients who presented with a major bleeding event at Royal London Hospital from 2013 – 2016 were traced to determine if they had any prior contact at Barts Health NHS Trust (BH) and information pertaining anticoagulants that are available on their ToC documents were recorded.
- For patients who were admitted to BH within 30 days after their last review at BH ( $\leq 30$  days cohort), the ToC document and case notes were further analyzed to identify additional bleeding risk factors that were present.

### REFERENCES

1. Green L, Tan J, Morris J, Alikhan R, Curry N, Everington T et al. A three-year prospective study of the presentation and clinical outcomes of major bleeding episodes associated with oral anticoagulant use in the UK (ORANGE study). *Haematologica*. 2018;103(4):738-745.
2. World Health Organization (2017). *Medication Without Harm - Global Patient Safety Challenge on Medication Safety*. Geneva, pp 5-12

### RESULTS

Table 1: Bleeding burden by anticoagulant

	Warfarin (n= 180)	Rivaroxaban (n=20)	Apixaban (n=12)	Others (n=8)
Intracranial bleeds	49%	30%	42%	50%
Gastrointestinal bleeds	13%	40%	33%	25%
Other bleeds	38%	30%	25%	25%

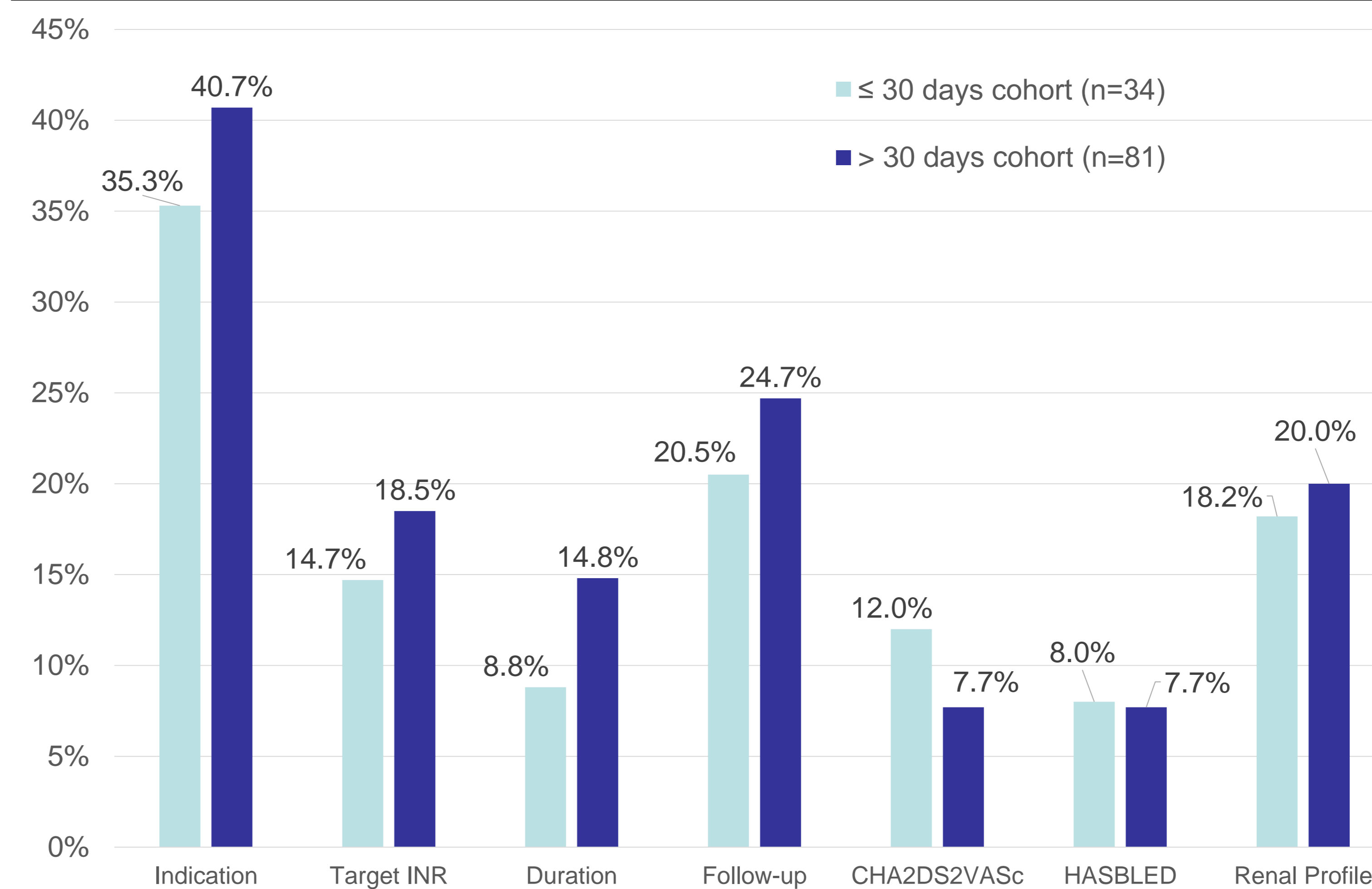


Figure 1 : Availability of anticoagulant information on ToC documents

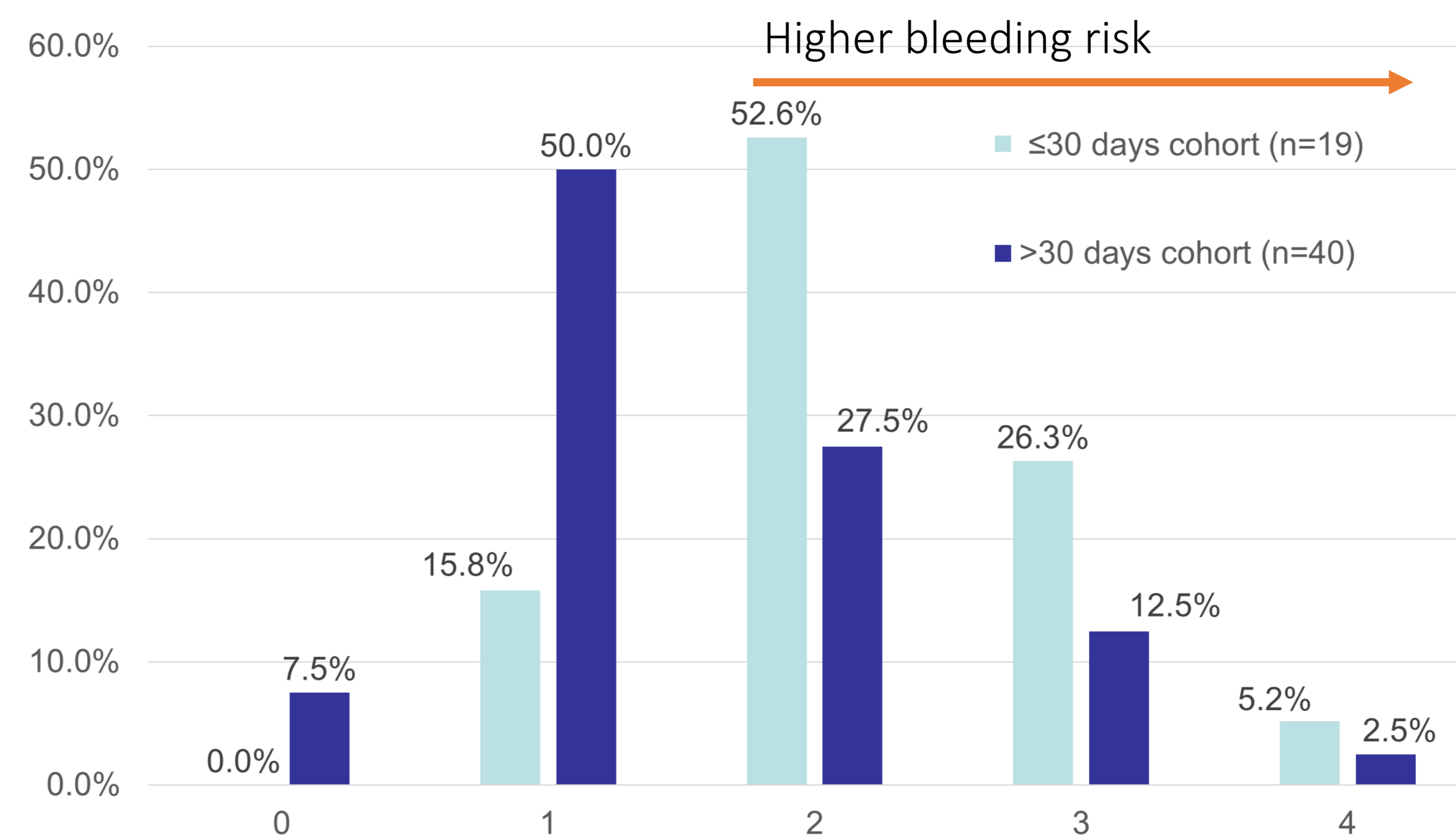


Figure 2: HASB(L)ED scores of Atrial Fibrillation patients

#### Other findings

- 14.5% of all patients died after major bleed
- 29.6% of patients who followed up at BH were readmitted within 30 days from last contact at BH
- 68% of patients had more than 4 bleeding risk factors in  $\leq 30$  days cohort (co-morbidities, concomitant medication, social history, previous bleeds)

### DISCUSSION & CONCLUSION

- Intracranial haemorrhage still remains to be the most debilitating complication from warfarin (similar to UK findings) but direct oral anticoagulants shared different bleeding profiles, possibly due to small sample size.<sup>1</sup>
- More than 50% of ToC documents in  $\leq 30$  days cohort had no information on anticoagulants. The most common cause of these incidents were due to human factors such as incomplete discharge letters.
- **Conclusion** : Availability of information provided on ToC documents is poor and is more apparent in those who were admitted within 30 days from their last contact at BH indicating that these information are vital to be present to minimize patient harm.

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