



# Role Network Analysis of Critical Care Medicine Teams

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## Introduction

- VTE (Venous Thromboembolism), which encompasses DVT (Deep Vein Thrombosis) and PE (Pulmonary Embolism), accounts for approximately 10% of in-hospital mortality in the US<sup>1</sup>.
- An estimated 900,000 cases occur each year with 1/3 of cases being fatal<sup>1</sup>.
- The American College of Physicians has recommended the use of VTE pharmacologic prophylaxis to prevent the occurrence of VTE<sup>2</sup>.
- Despite past efforts to increase VTE prophylaxis such as electronic reminders, clinical decision support, and education, VTE prophylaxis continues to be a problem<sup>3</sup>.

## Objective

- To understand team members' individual activities and interactions involved in VTE prophylaxis management.

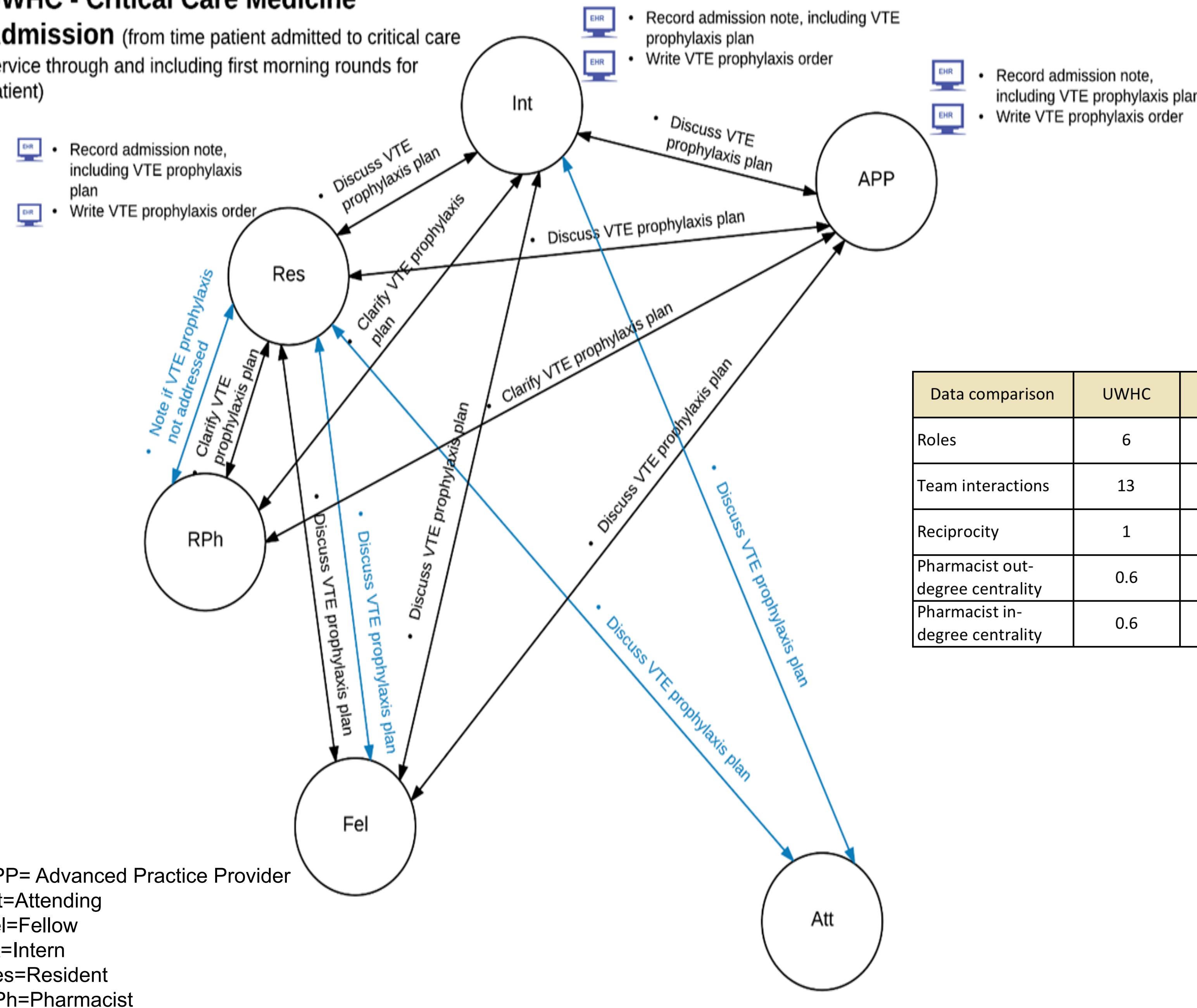
## Methods

- 13 interviews (total: 9 hours) were conducted at GMC and 11 interviews (total: 10 hours) were conducted at UWHC to gather information on VTE prophylaxis management processes.
- Interview data were coded and transferred into the diagramming software, Lucidchart®, to create the role networks.
- Social network metrics (reciprocity, centrality, in-degree centrality, and out-degree centrality) were measured for the networks and for each role within the networks.

## Results

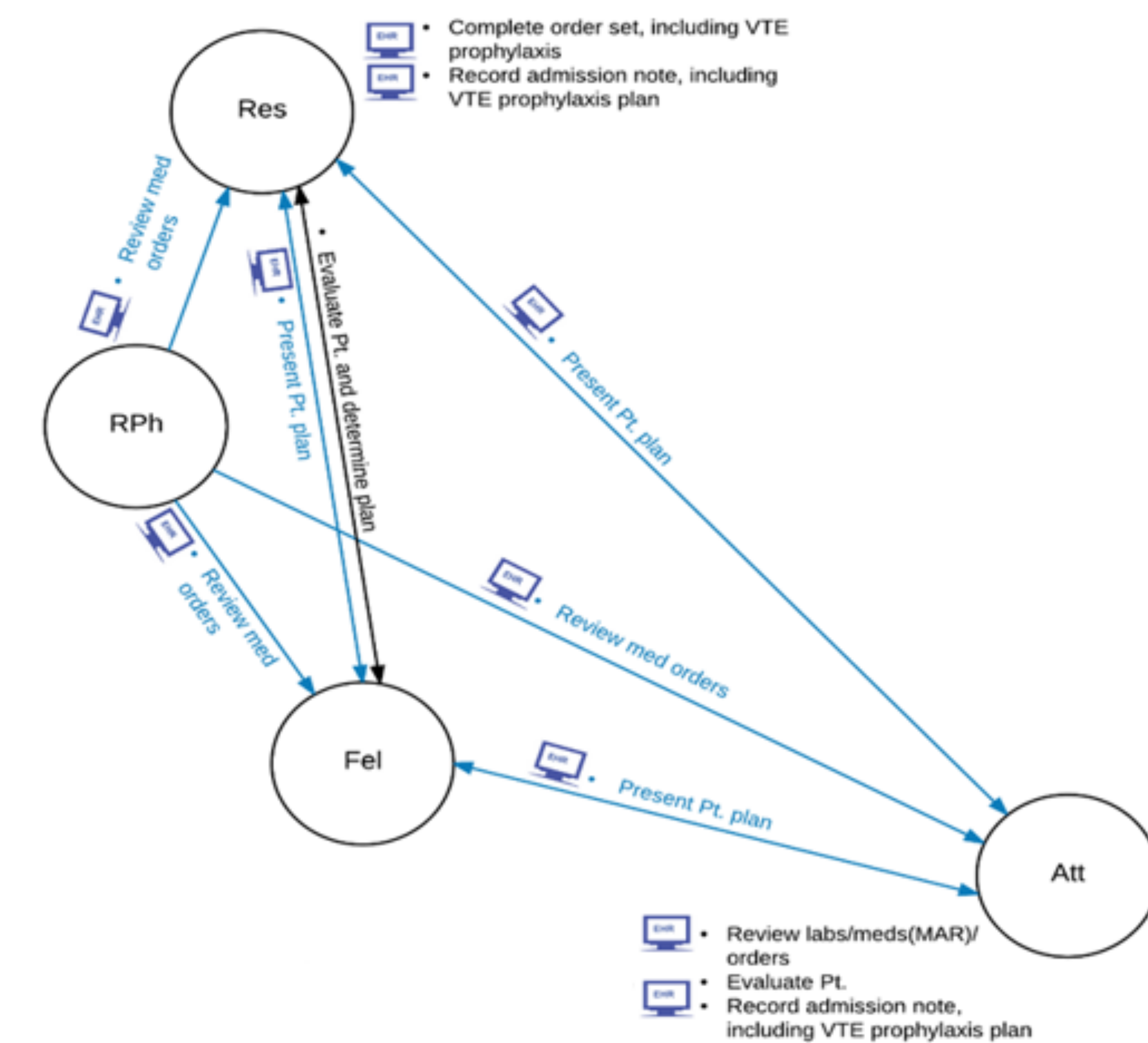
### UWHC - Critical Care Medicine

**Admission** (from time patient admitted to critical care service through and including first morning rounds for patient)



### GMC - Critical Care Admission (from time patient admitted to critical care service through and including first morning rounds for patient)

Record admission note, including VTE prophylaxis plan  
Write VTE prophylaxis order



Data comparison	UWHC	GMC
Roles	6	4
Team interactions	13	7
Reciprocity	1	0.5
Pharmacist out-degree centrality	0.6	1
Pharmacist in-degree centrality	0.6	0

APP= Advanced Practice Provider  
Att=Attending  
Fel=Fellow  
Int=Intern  
Res=Resident  
RPh=Pharmacist

## Conclusion

- VTE prophylaxis care decisions involve many team members and require multiple team interactions.
- During the admission process, UWHC includes 6 roles to discuss VTE prophylaxis, and GMC includes 4 roles.
- UWHC has a higher number of team interactions than GMC (13 versus 7) and a higher reciprocity score (1 versus 0.5).
- The pharmacist at UWHC is more likely to be involved in two-way communication with other healthcare team members.
- Next steps:
  - Use information from role network analyses to determine design requirements for clinical decision support to support VTE prophylaxis.

## References

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