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POSTER ABSTRACTS

901. HEALTH SERVICES AND QUALITY IMPROVEMENT - NON-MALIGNANT CONDITIONS

Evaluation of Venous Thromboembolism Prevention Practices in US Hospitals

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Background

Hospital-associated venous thromboembolism (HA-VTE) is a significant, deadly, costly, and growing public health problem. While as many as 70% of cases of HA-VTE in patients could be prevented, proven VTE prevention strategies are not applied systematically across U.S. hospitals systems. There is a need to assess and better understand the landscape around VTE prevention practices in U.S. hospitals.

Methods

The Joint Commission and the Centers for Disease Control and Prevention (CDC) collaborated in the development of a probability-based hospital survey collected in accordance with the American Association for Public Opinion Research guidelines. The population comprised all U.S. and territorial general medical, general surgical, and critical-access hospitals in the 2019 American Hospital Association database. Hospitals were stratified by bed size (small ≤ 100 beds; medium 100-399 beds; and large ≥ 400 beds), then randomly sampled an equal number of hospitals in each group. The intended respondent was the chief medical officer, director of quality or safety, or person of a similar title. The questionnaire comprised 44 items, including topics on hospital policies and protocols, barriers to implementation of VTE prevention practice, quality monitoring and improvement efforts, and risk assessment activities. The χ^2 test was used to examine differences in response rates by hospital characteristics. This project was deemed non-research in accordance with federal regulation for the protection of human subjects in research.

Results

There were 4605 eligible hospitals, of which 1290 were randomly selected for the sample, and 1212 had available contact information and were presumed reached. Of these, 311 submitted sufficient data for inclusion, a response rate of 25.7%. Response rates did not differ significantly by location (urban vs rural) or bed size, however major teaching hospitals were more likely to respond than minor or non-teaching hospitals ($p < .001$). (Table 1)

More than half of hospitals reported having a VTE prevention policy (58.0%) (Table 2). Most had a hospital-wide VTE prevention protocol (81.5%) and/or unit-specific protocols (59.9%). Less than half had a VTE prevention team, committee, or workgroup and only 21.8% had a designated VTE prevention team and 19.2% reported VTE prevention activities were addressed by another committee. Large hospitals were more likely to have a designated team ($p < .001$). When a team or committee exists, there is representation from at least 2 departments (96.7%).

Almost 80% reported they have clinical decision support (CDS) tools to help guide the selection of appropriate VTE prophylaxis for medical and surgical patients. The availability of CDS was greater in large and medium hospitals for both medical and surgical units ($p < .002$). Approximately 60% reported that their admission order sets addressed VTE prophylaxis and completion is mandatory. Reminders or alerts are provided for patients by about 60% of hospitals. Missed anticoagulant doses are routinely documented at 80.1% of hospitals. Around 50% of hospitals reported they conduct audits and provide feedback related to VTE prophylaxis for patients.

Over 70% of hospitals educate patients about VTE prevention, including the importance of VTE prophylaxis, during the hospitalization; a little more than a third of hospitals provide annual VTE prevention education to clinicians. About half reported they have an ambulation protocol for patients. There were no variations by hospital bed size for education or ambulation protocols.

Data on the number of newly diagnosed HA-VTE is collected in 75.6% of hospitals. This was lower in small hospitals ($p = .004$). Whereas just 44.7% track the number of patients with bleeding events and/or complications related to anticoagulant pro-

phylaxis. Only 43.7% collect data on the patients receiving appropriate VTE prophylaxis and even fewer collect data on of patients receiving risk assessment (29.3%).

Conclusion

This survey of hospital VTE prevention practices identified numerous areas for improvement in the establishment and implementation of HA-VTE prevention policies and procedures. Overall, there were limited differences in prevention practices based on hospital bed size. Improving the awareness and application of evidence-based guidelines and interventions may reduce the incidence of HA-VTE.

Disclosures No relevant conflicts of interest to declare.

Table 1. Characteristics of the hospital sample and respondents

Characteristic	Population med/surg hospitals 2019 (n=4605)	Original sample* (n=1290)	Hospitals reached, n% (n=1212**)	Hospitals participated, n% (n=911)	P-value (comparing response rates by hospital characteristic)
Urban	2737	940	913 (97.1)	235 (25.7)	0.97
Rural	1843	343	299 (87.2)	76 (25.4)	
<100 beds	2331	430	382 (88.8)	85 (22.3)	0.16
100-399	1802	430	419 (97.4)	117 (27.9)	
≥ 400	472	430	411 (95.6)	109 (26.5)	
Major teaching	274	200	199 (99.5)	71 (35.7)	<.001
Minor	1677	550	536 (97.5)	138 (25.7)	
Nonteaching	2654	540	477 (88.3)	102 (21.4)	

*Random sample stratified by bed size
 **Assumed reached but may have been blocked by spam filters
 Response rate 25.7%, more major teaching
 Hospital characteristics for hospitals reached are from American Hospital Association, American Hospital Association (AHA) Annual Survey Database - 2019

Table 2. Frequency of hospital responses to survey questions by bed size (N=911)

Question	Total	Small	Med	Large	P-value
Hospital has a VTE prevention policy	178 (58.0)	50 (58.8)	72 (63.2)	56 (51.9)	0.23
No	129 (42.0)	35 (41.2)	42 (36.8)	52 (48.1)	
Missing	4	0	3	1	
Hospital has a VTE prevention team					<.001
Yes, designated team	67 (21.8)	6 (7.1)	17 (14.8)	44 (40.7)	
Yes, VTE is addressed by another committee	59 (19.2)	16 (19.0)	17 (14.8)	26 (24.1)	
No	181 (59.0)	62 (73.8)	81 (70.4)	38 (35.2)	0.45
Missing	4	1	2	1	
The VTE prevention team (committee or work group) has representation from two or more hospital departments	118 (96.7)	21 (95.5)	31 (93.9)	66 (98.5)	
No	4 (3.3)	1 (4.5)	2 (6.1)	1 (1.5)	0.17
Missing	4	0	1	3	
Hospital has a hospital-wide VTE prevention protocol	251 (81.5)	63 (75.0)	98 (85.2)	90 (82.6)	
No	57 (18.5)	21 (25.0)	17 (14.8)	19 (17.4)	0.17
Missing	3	1	2	0	
The hospital has a unit-specific VTE prevention protocol					
Yes, both + med only + surg only + other	185 (59.9)	47 (56.0)	65 (56.0)	73 (67.0)	
No unit specific protocols	124 (40.1)	37 (44.0)	51 (44.0)	36 (33.0)	
Missing	2	1	1	0	0.002
Hospital provides clinical decision support tools to help guide the selection of appropriate VTE prophylaxis for medical patients	216 (78.5)	49 (74.2)	85 (81.7)	82 (78.1)	
No	59 (21.5)	17 (25.8)	19 (18.3)	23 (21.9)	
Missing	36	19	13	4	<.001
Hospital provides clinical decision support tools to help guide the selection of appropriate VTE prophylaxis for surgical patients	215 (79.3)	44 (68.8)	84 (82.4)	87 (82.9)	
No	56 (20.7)	20 (31.3)	18 (17.6)	18 (17.1)	
Missing	40	21	15	4	0.73
Completion of admission order sets which address VTE prophylaxis is mandatory for medical units	171 (61.7)	38 (57.6)	67 (63.2)	66 (62.9)	
No, n/a, unknown and optional	106 (38.3)	28 (42.4)	39 (36.8)	39 (37.1)	
Missing	34	19	11	4	0.73
Completion of admission order sets which address VTE prophylaxis is mandatory for surgical units	165 (61.6)	35 (57.4)	64 (62.1)	66 (63.5)	
No, n/a, unknown and optional	103 (38.4)	26 (42.6)	39 (37.9)	38 (36.5)	
Missing	43	24	14	5	0.13
Missed anticoagulant doses are routinely documented for medical units and/or surgical units (any checked yes)	217 (80.1)	48 (75.0)	81 (77.1)	88 (86.3)	
Unchecked (no, missing and n/a)	54 (19.9)	16 (25.0)	24 (22.9)	14 (13.7)	
Reminders (electronic and/or human alerts) are provided for general medical patients when patient has not had risk assessment done or appropriate prophylaxis ordered.	169 (62.4)	42 (64.6)	62 (59.0)	65 (64.4)	0.67
No	102 (37.6)	23 (35.4)	43 (41.0)	36 (35.6)	
Missing	40	20	12	8	
Reminders (electronic and/or human alerts) are provided for general surgical patients when patient has not had risk assessment done or appropriate prophylaxis ordered.	167 (62.5)	39 (61.9)	60 (58.8)	68 (66.7)	0.51
No	100 (37.5)	24 (38.1)	42 (41.2)	34 (33.5)	
Missing	44	22	15	7	
VTE prevention education is provided at least annually for general medical clinicians	97 (35.9)	22 (33.8)	38 (36.2)	37 (37.0)	0.92
No	173 (64.1)	43 (66.2)	67 (63.8)	63 (63.0)	
Missing	41	20	12	9	
VTE prevention education is provided at least annually for general surgical clinicians	101 (38.7)	21 (35.0)	38 (37.6)	42 (42.0)	0.65
No	160 (61.3)	39 (65.0)	63 (62.4)	58 (58.0)	
Missing	50	25	16	9	
VTE prevention education for medical patients in any time during hospitalization	194 (71.1)	46 (71.9)	74 (69.8)	74 (71.8)	0.94
No	79 (28.9)	18 (28.1)	32 (30.2)	29 (28.2)	
Missing	38	21	11	6	
VTE prevention education for surgical patients in any time during hospitalization	204 (75.0)	45 (70.3)	77 (74.0)	82 (78.8)	0.44
No	68 (25.0)	19 (29.7)	27 (26.0)	22 (21.2)	
Missing	39	21	13	5	
Hospital has an ambulation protocol for general medical patients	137 (49.6)	36 (54.5)	49 (46.7)	52 (49.5)	0.6
No	139 (50.4)	30 (45.5)	56 (53.3)	53 (50.5)	
Missing	35	19	12	4	
Hospital has an ambulation protocol for general surgical patients	151 (55.5)	35 (55.6)	53 (51.0)	63 (60.0)	0.42
No	121 (44.5)	28 (44.4)	51 (49.0)	42 (40.0)	
Missing	39	22	13	4	
Hospital performs audits and feedback related to VTE prophylaxis for medical patients	131 (47.8)	37 (56.1)	47 (45.2)	47 (45.2)	0.31
No	143 (52.2)	29 (43.9)	57 (54.8)	57 (54.8)	
Missing	37	19	13	5	
Hospital performs audits and feedback related to VTE prophylaxis for surgical patients	138 (51.7)	33 (53.2)	46 (45.1)	59 (57.3)	0.21
No	129 (48.3)	29 (46.8)	56 (54.9)	44 (42.7)	
Missing	44	23	15	6	
Hospital currently collects data over time on percent of patients with a VTE risk assessment	91 (29.3)	31 (36.5)	27 (23.1)	33 (30.3)	0.11
No (not checked)	220	54	90	76	
Hospital currently collects data over time on percent of patients receiving appropriate VTE prophylaxis	136 (43.7)	45 (52.9)	43 (36.8)	48 (44.0)	
No (not checked)	175	40	74	61	0.004
Hospital currently collects data over time on number of newly diagnosed cases of HA-VTE	235 (75.6)	53 (62.4)	94 (80.3)	88 (80.7)	
No (not checked)	76	32	23	21	
Hospital currently collects data over time on # of patients with bleeding events and/or complications related to anticoagulant prophylaxis	139 (44.7)	34 (40.0)	59 (50.4)	46 (42.2)	0.27
No (not checked)	172	51	58	63	

Bed size (small <100 beds; medium, 100-399 beds; and large ≥400 beds)
 *Percentages based on those expected to answer the question according to questionnaire skip logic

Figure 1

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