considered recanalized if the VQI listed complete recanalization of the target vein. Univariate and multivariate comparisons were performed as appropriate.

Results: A total of 10,604 procedures were performed in 7403 patients. The average age was 55.9 years and 70.3% of the patients were female (Table). Patients with recanalization were more likely to have a history of phlebitis ($P < .001$) and had a higher mean body mass index (30.5 vs 32.7 kg/m^2; $P = .006$) compared with those without recanalization. There was no difference in the use of compression therapy, anticoagulation, deep venous reflux, number of pregnancies, prior deep vein thrombosis, Venous Clinical Severity Score, and CEAP score between patients with and without recanalization. The number of truncal veins treated per procedure was higher in the recanalization group compared with the nonrecanalization group (2.36 vs 1.88; $P = .001$). Following multivariate logistic regression, laser ablation was associated with higher rate of recanalization compared with radiofrequency ablation ($P = .017$).

Conclusions: This study is the first to use VQI based data to describe risk factors for recanalization following treatment of truncal venous reflux. The use of laser ablation for truncal veins is associated with a higher risk for recanalization compared with radiofrequency ablation. Obesity, prior phlebitis, and number of veins treated, were independently associated with increased rate of recanalization.

Table. Characteristics of patients undergoing truncal venous treatments from 2014 to 1018

Characteristics	No.	Percent
Age, years (mean)	55.9	
Gender		
Male	3155	29.75
Female	7449	70.25
Procedure year		
2014	65	0.61
2015	2472	23.31
2016	3827	36.09
2017	3490	32.91
2018	750	7.07
Race		
American Indian/Alaskan Native	22	0.21
Asian	129	1.22
Black	659	6.21
Native Hawaiian	13	0.12
White	8480	79.97
>1	20	0.19
Unknown	1281	12.08
Body mass index, kg/m^2 (mean)	30.4	
Phlebitis	986	9.30
Prior DVT	478	4.51
Prior varicose vein treatment	2235	21.08
No. of pregnancies (mean)	2.22	
VCSS (mean)		
Right	7.87	
Left	7.98	
Compression		
None	2894	27.29
Sometimes	3076	29.01
Always	3092	29.16
Anticoagulation		
None	9623	90.75
Yes, held	822	7.75
Yes, continued	159	1.50

DVT, Deep vein thrombosis; *VCSS*, Venous Clinical Severity Score.

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Evaluating the Ability of Caprini and Padua Scores to Predict Venous Thromboembolism in a Nationwide Study

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Objective: Venous thromboembolism (VTE) is a preventable complication of hospitalization. VTE risk-assessment models (RAMs) including the Caprini and Padua RAMs quantify VTE risk based on demographic and clinical characteristics. Both RAMs have performed well in selected high-risk cohorts with relatively small sample sizes but few studies have evaluated the RAMs in large, unselected cohorts. We assessed the ability of both RAMs to predict VTE in a large, nationwide, diverse cohort of surgical and nonsurgical patients.

Methods: We analyzed consecutive first hospital admissions of 1,252,460 unique patients to 1283 VA facilities nationwide between January 2016 and December 2021. Caprini and Padua scores were calculated using data from the VA Informatics and Computing Infrastructure, the electronic medical record repository of the entire VA system. We first assessed the ability of the two RAMs to predict VTE within 30, 60, and 90 days after admission. We then compared the predictive ability of the two RAMs in surgical and nonsurgical patients by comparing the areas under their respective receiver operating characteristic curves.

Results: We analyzed 1,252,460 hospitalized patients; 26.6% (n = 333,286) where surgical patients and 73.4% (n = 948,728) were nonsurgical. Caprini scores ranged from 0 to 28 (median, 4; interquartile range, 3-6); Padua scores ranged from 0 to 13 (median, 1; interquartile range, 1-3); higher scores were associated with higher VTE rates. 35,557 patients developed VTE within 90 days of admission (2.88%) (Table). The ability of both RAMs to predict VTE within 90 days of admission was low (area under the curve, 0.56 and 0.59, respectively). The predictive ability of both RAMs was similar within 30, 60, and 90 days of admission. Both RAMs performed marginally better in nonsurgical compared with surgical patients (Caprini areas under the curve: 0.59 vs 0.54; $P = .001$; Padua areas under the curve: 0.60 vs 0.56; $P = .001$) **(**Figure).

Conclusions: In the largest validation study performed to date, increasing Caprini and Padua RAM scores are associated with increasing VTE rates. Both RAMs have low ability to predict VTE at 30, 60, or 90 days after admission in an unselected population of surgical and nonsurgical patients. Both RAMs are marginally better at predicting VTE risk in nonsurgical populations. Studies are needed to improve the predictive ability of existing VTE RAMs before they can be applied to the general hospital population.

Table. Distribution of VTE events within 30, 60, and 90 days after admission of 1,252,460 unique consecutive surgical and nonsurgical patients nationwide between 2016 and 2021

Time from hospital admission, days	VTE type			
	PE only	PE with DVT	DVT only	Total VTE events
0-30	8092	3144	14,372	25,608
0-60	9801	3764	17,992	31,557
0-90	10,940	4116	20,501	35,557

DVT, Deep vein thrombosis; *PE*, pulmonary embolism; *VTE*, venous thromboembolism.

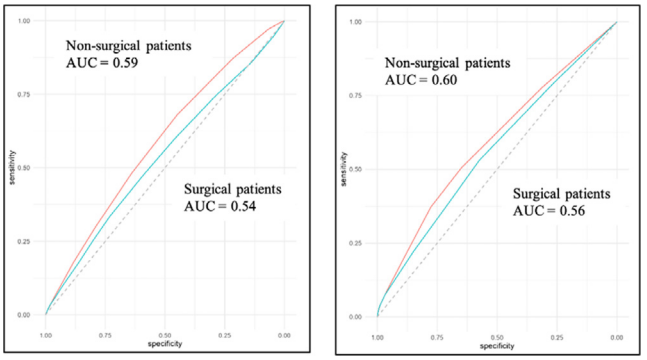

Fig. Receiver operating characteristic (ROC) curves demonstrating the ability of the **(A)** Caprini and **(B)** Padua risk assessment models (RAMs) to predict a venous thromboembolism (VTE) event within 90 days of hospital admission. Each graph demonstrates the ROC curve for surgical (blue) and nonsurgical (red) patients computed separately. *AUC*, area under the curve. **(A)** ROC curves for VTE prediction by the Caprini score in surgical and nonsurgical patients. **(B)** ROC curves for VTE prediction by the Padua score in surgical and nonsurgical patients.

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Sources of Venous Reflux with Venous Stasis Recurrence

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Objective: Venous stasis ulcers are associated with significant morbidity, cost, and recurrence. The etiology of ulcer recurrence remains largely unknown. This retrospective study sought to determine factors that may contribute to ulcer recurrence such as failed ablations that were initially successful, new sources of reflux, and continued reflux in untreated veins.

Methods: Electronic health record and billing data were used to acquire and compile data from a vascular surgery practice. We reviewed the charts of patients who underwent Unna Boot placement for venous stasis ulcers between 2012 and 2021. We identified which patients had ulcers and underwent ablation therapy and iliac vein stenting. Venous mapping data was collected when the patient first presented with an ulcer and when they had an ipsilateral ulcer recurrence. Ablation data was collected from the time interval between the patient's first ulcer visit and the date of ulcer recurrence. We then identified which superficial venous segments, for limbs that had ablation therapy and ulcer recurrence, had continued or new venous reflux. Venous reflux cutoff was more than 500 ms.

Results: There were 298 patients who presented with 420 limbs with venous stasis ulcers, 147 left extremities, 149 right extremities, and 124 bilateral. The mean age was 70.1 ± 13.7 years (range, 28-95 years). Of these 420 limbs, 218 had ablations and of these 135 had recurrent ulcers. Upon recurrence, duplex exams revealed that six ablations had failed: one above knee (AK) great saphenous vein (GSV), two below knee (BK)-GSV, two small saphenous vein (SSV), and one accessory saphenous vein (ASV). Ablation procedures were as follows: for the left extremity, 102 AK-GSV, 43 BK-GSV, 71 SSV, and 23 ASV; for the right extremity, 108 AK-GSV, 22 BK-GSV, 71 SSV, and 21 ASV. New sources of reflux for the left extremity were as follows: 3 AK-GSV, 12 BK-GSV, 5 SSV, and 2 ASV. Continued untreated reflux for the left extremity was as follows: 9 AK-GSV, 1 BK-GSV, 9 SSV, and 0 ASV. New sources of reflux for the right extremity were as follows: 2 AK-GSV, 8 BK-GSV, 6 SSV, and 1 ASV. Continued untreated reflux for the right extremity was as follows: 7 AK-GSV, 2 BK-GSV, 6 SSV, and 0 ASV. Of the 135 limbs with ulcer recurrence, 37/68 had an ipsilateral stent on the left, and 33/67 had an ipsilateral stent on the right. Of the 83 limbs with no ulcer recurrence, 25/46 had an ipsilateral stent on the left, and 16/37 had an ipsilateral stent on the right. The average time to ulcer recurrence was 334.2 ± 523.8 days (range, 5-2726 days).

Conclusions: Our results suggest that patients should be treated aggressively with ablation therapy early on in their disease and upon follow-up. The data demonstrated new reflux in a substantial amount of limbs that underwent prior ablation therapy for other venous segments.

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One-Year Interim Outcomes of Mechanical Thrombectomy for Deep Vein Thrombosis From the Real-World CLOUT Registry

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Objective: The prospective, multicenter CLOUT registry (NCT03575364) evaluates all-comer patients with lower extremity deep vein thrombosis (DVT) treated with the ClotTriever System. We present here the interim 1-year outcomes.

Methods: Patients with bilateral DVT, failed prior treatment, and symptom duration >2 weeks were not excluded. The primary effectiveness end point was complete or near-complete (≥75%) thrombus removal, assessed by an independent core laboratory. Serious adverse events at 30 days, including device-relatedness, were adjudicated by an independent medical monitor. Duplex ultrasound and clinical outcomes are reported to 1 year.

Results: Of the 500 patients (520 treated limbs) enrolled, the median age was 61.9 years, 49.6% (248/500) were male, 24.6% (123/499) had prior history of DVT, and 29.5% (147/499) had a high bleeding risk with thrombolytics. Patients had a median baseline Villalta score of 9. Procedures were completed in a single session in 99.4% of patients (497/500), with a median of four device passes. Adjunctive venoplasty was used in 72.9% (379/520) and stents were placed in 44.2% (230/520) of treated limbs. Median blood loss was 37.5mL. At least 75% thrombus removal was achieved in 89.0% (324/364) of limbs, including 58.8% (214/364) with complete (100%) thrombus removal. The median post-thrombectomy hospital stay was 1 day. Through 30 days, there was 1 (0.2%) device-related serious adverse event and no major bleeding events; all-cause mortality was 1.0% (4/421). One-year follow-up for 176 patients was completed (Table): 93.5% of limbs (130/139) had flow present and 97.1% (135/139) were compressible; 21.0% of patients (34/162) presented with post-thrombotic syndrome (Villalta score >4) and 10.5% (17/162) with moderate or severe post-thrombotic syndrome (Villalta score >9). Significant improvements in pain, revised venous clinical severity score, quality of life, and mid-calf edema were observed at 1 year.

Conclusions: This 1-year interim analysis from the real-world CLOUT registry indicates that the ClotTriever System can effectively remove thrombi with significant and sustained long-term clinical improvements, including PTS, pain, and quality of life. Follow-up with the complete dataset to 2 years is ongoing.