



AUDIT OF LOWER LIMB DVT DETECTION WITH ULTRASOUND

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BACKGROUND

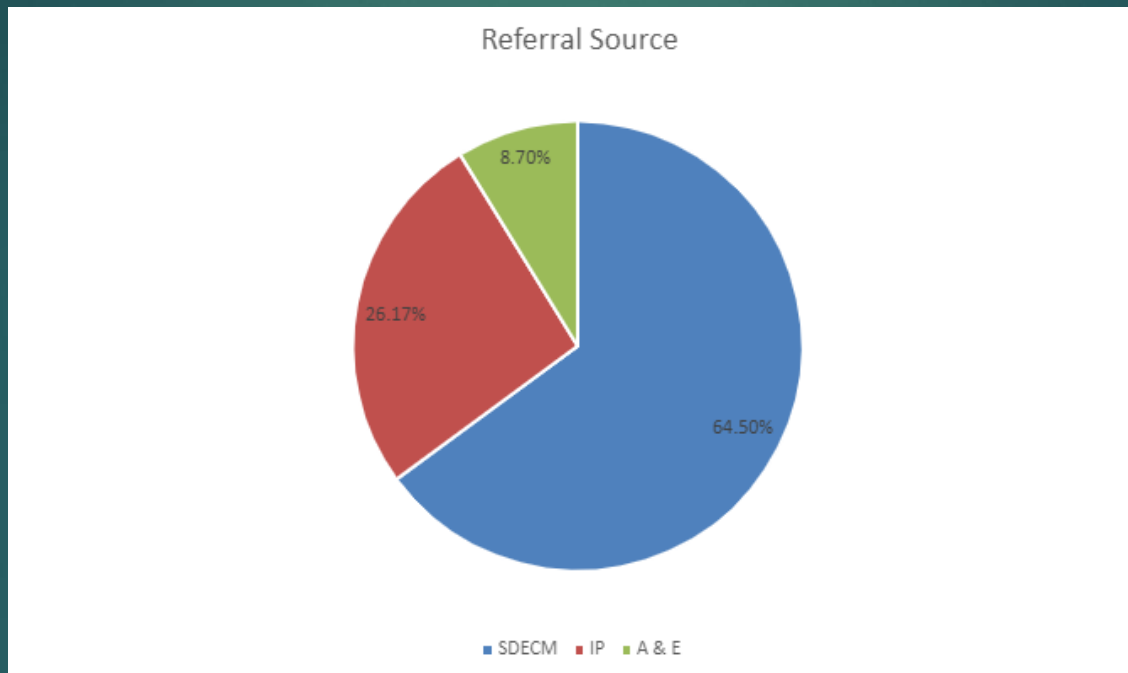
- ▶ Lower limb DVT examinations have increased significantly over the last ten years 38% increase 2012-2022 (2400 examinations in 2022).
- ▶ Incidence of positive detection rate appears variable and subjectively the positive DVT rate was reported to be low.
- ▶ Research suggests a positive DVT detection rate of 15% is reasonable (Kainz et al, 2021, H,ng et al 2012).
 - ▶ Based on proximal DVT examination (NICE guidelines).
 - ▶ Whole leg scanning is the protocol at CRH following appropriate triage.

Reason for Audit

- ▶ Identify referral source and percentage.
- ▶ Identify positive detection rate of lower limb DVT, as a Trust and from individual referral sources.
- ▶ Understand the variability in lower limb DVT referrals.

Referral Source

- ▶ Multiple referral sources for lower limb DVT examination. SDECM, A & E, In-patient.



PROCESS

- ▶ Retrospective search using CRIS for lower limb DVT examinations performed during set periods of 2021/2022.
- ▶ Report reviewed for each case to identify findings.
 - ▶ DVT identified.
 - ▶ SVT identified.
 - ▶ Negative for VTE.
 - ▶ Incidental pathology not included in audit.

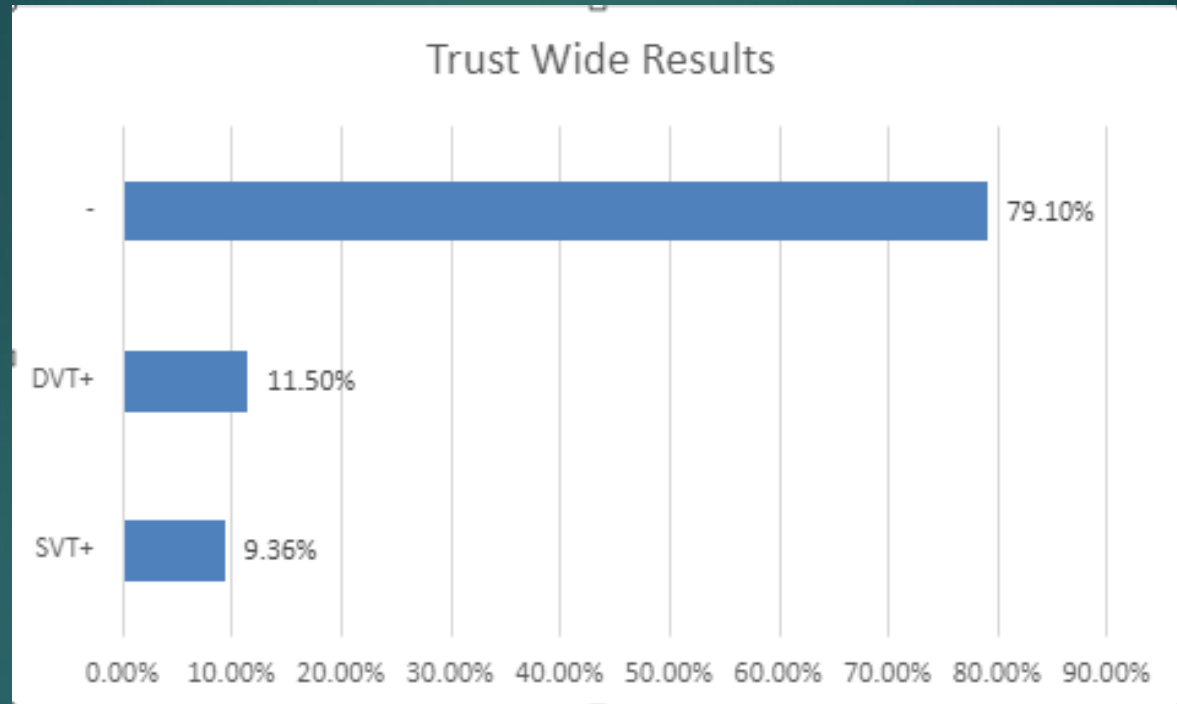
RESULTS

	Referral Source				Results			Individual Referrer DVT + %		
	SDEC	InPatient	A and E	Total	SVT+	DVT+	-	SDEC	InPatient	A and E
Block 1 12 Weeks 29th April - 21st July 2021	63.50%	28.50%	6.08%	50	5.83%	11.25%	82.92%	11.25%	11.58%	12.58%
Block 2 10 Weeks 3rd Jan - 13th Mar 2022	66%	26.00%	8.00%	47	10.70%	13.60%	75.70%	13.00%	13.10%	12.40%
Block 3 9 Weeks 4th July - 4th Sep 2022	64%	24%	12%	50	11.56%	9.78%	78.78%	6.56%	15.44%	15.44%
TOTAL 31 Weeks	64.50%	26.17%	8.70%	49	9.36%	11.50%	79.10%	10.27%	13.37%	13.47%

Results – Referrals

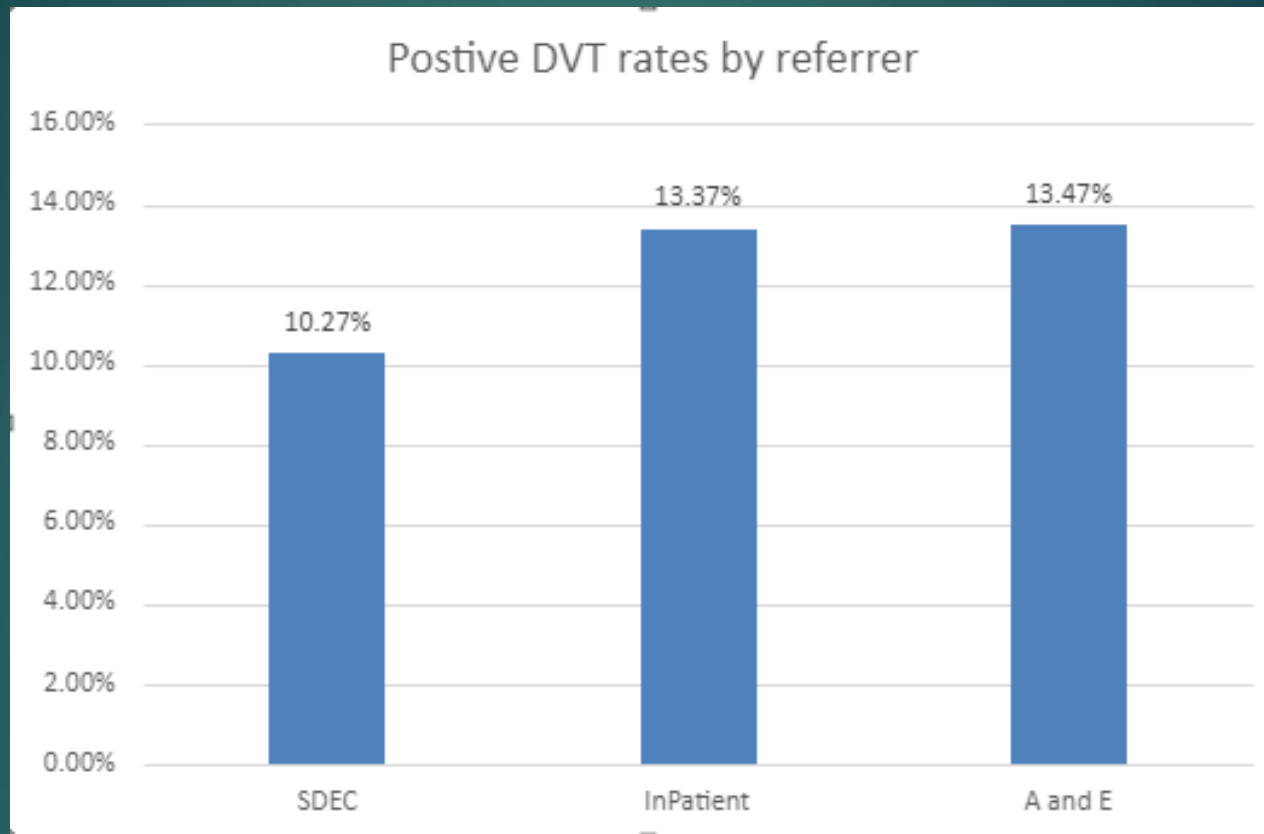
- ▶ Average 50 a week. Variable spread across individual days. Highest 17, Lowest 0.
- ▶ All on a dynamic basis, with minimum expectation of within 24hours, however reality of a few hours expectation to facilitate discharge.
- ▶ 65% from SDECM, 25% in-patients, 10% A and E.
- ▶ Difficult to manage in an already busy vascular lab.
- ▶ Creation of the mobile room situated in suite 4.
 - ▶ Dedicated service for SDECM, SAU and SDECS

Results – Detection rates



Note should be made that we treat superficial thrombus at this trust of >10cm in length or if the thrombus is within 3cm of a junction with the deep system.

Results – Detection rates



Detection rates - Comments

- ▶ Overall DVT/SVT detection rates are reasonable.
- ▶ Slightly low positive rate SDECM. Could this be improved with better use of d-dimer, wells score? (most requests do not contain this information)
- ▶ Particularly low positive rate (throughout the summer in SDECM 6.5%) ? Staffing, ? Workload pressure
- ▶ Considering full leg scanning, other mimicking pathology is often detected e.g. Baker's cyst, subcutaneous oedema which may aid patient management.

Further Action

- ▶ Discussion with SDECM.
- ▶ Review audit for pathology detection.
- ▶ Re-audit for up to date information.
- ▶ Continue to collect evidence to demonstrate the benefits of dedicated SDEC ultrasound room.

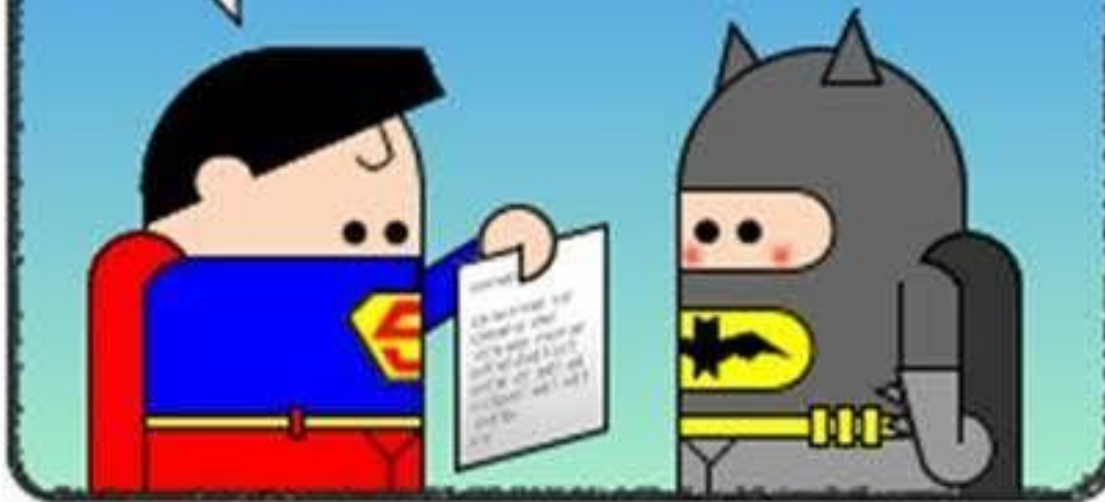
References

H'ng, M.W.C. et al, (2012) "Effectiveness of an algorithm in reducing the number of unnecessary ultrasound scans for deep vein thrombosis: an evaluation report," *Singapore Med Journal*, 53(9), pp. 595–598.

Kainz, B. et al, (2021) "Non-invasive diagnosis of deep vein thrombosis from ultrasound imaging with machine learning," *NPJ Digital Medicine*, 4(137). Available at: <https://www.nature.com/articles/s41746-021-00503-7> (Accessed: December 23, 2022).

SUPERDUPER HEROES

LOOK, A LETTER FROM MY DOCTOR...
I HAVE TO WEAR TIGHTS TO PREVENT
DVT WHEN FLYING AT 30,000 FEET.
SO WHAT IS YOUR EXCUSE?



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