

Benefici del team accessi vascolari nella riduzione delle complicanze

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Molteplici modelli di VAT

Adult Vs Paediatric

Peripheral Vs
Central

PICC Vs CICC Vs
Tunnelled VAD Vs
TIVAD

Insertion Only Vs
Insertion And
Follow-up Care
Services.

Nurses Vs Doctors

Anesthetists Vs
Surgeons Vs IR Vs ...

Qualitative interviews and supporting evidence to identify the positive impacts of multidisciplinary vascular access teams

Baudolino Mussa^a, Fulvio Pinelli^e, Noemí Cortés Rey^g, Jennifer Caguioa^d, Fredericus Henricus Johannes Van Loon^c, Gema Munoz Mozas^f, Ulf Teichgräber^h and Didier Lepelletier^b

«The definition of a VAT is heterogeneous...but is, in essence: a multidisciplinary group of healthcare professionals *‘whose primary role is to assess, insert, manage, perform surveillance, analyze their service data and solve clinical concerns and where possible remove VADs’*...

One size does not fit all»

Qualitative interviews and supporting evidence to identify the positive impacts of multidisciplinary vascular access teams

Baudolino Mussa^a, Fulvio Pinelli^e, Noemí Cortés Rey^g, Jennifer Caguioa^d, Fredericus Henricus Johannes Van Loon^c, Gema Munoz Mozas^f, Ulf Teichgräber^h and Didier Lepelletier^b

- ✓ Tassi di complicazione minori
- ✓ Tempi più rapidi dalla indicazione all'inserimento
- ✓ Minore durata della degenza del paziente
- ✓ Riduzione dei costi
- ✓ Una riduzione del numero di operatori sanitari altamente qualificati che conducono procedure di inserimento

BENEFICI DEL VAT: COSA DICE LA LETTERATURA

- Tomford, 1984: riduzione tasso di flebiti
- Soifer, 1998: riduzione tasso di flebiti
- Robinson, 2005: costo efficacia
- Carr 2008: più alta percentuale di successi al primo tentativo
- Brunelle, 2003: riduzione di CLABSI
- Lagemaat 2015: riduzione di CLABSI

Central Venous Catheter Placement by Advanced Practice Nurses Demonstrates Low Procedural Complication and Infection Rates—A Report From 13 Years of Service*

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Objectives: To report procedural characteristics and outcomes from a central venous catheter placement service operated by advanced practice nurses.

Design: Single-center observational study.

Setting: A tertiary care university hospital in Sydney, Australia.

Patients: Adult patients from the general wards and from critical care areas receiving a central venous catheter, peripherally inserted central catheter, high-flow dialysis catheter, or midline catheter for parenteral therapy between November 1996 and December 2009.

Interventions: None.

Measurements and Main Results: Prevalence rates by indication, site, and catheter type were assessed. Nonparametric tests were used to calculate differences in outcomes for categorical

data. Catheter infection rates were determined per 1,000 catheter days after derivation of the denominator. A total of 4,560 catheters were placed in 3,447 patients. The most common catheters inserted were single-lumen peripherally inserted central catheters ($n = 1,653$; 36.3%) and single-lumen central venous catheters ($n = 1,233$; 27.0%). A small proportion of high-flow dialysis catheters were also inserted over the reporting period ($n = 150$; 3.5%). Sixty-one percent of all catheters placed were for antibiotic administration. The median device dwell time (in d) differed across cannulation sites ($p < 0.001$). Subclavian catheter placement had the longest dwell time with a median of 16 days (interquartile range, 8–26 d). Overall catheter dwell was reported at a cumulative 63,071 catheter days. The overall catheter-related bloodstream infection rate was 0.2 per 1,000 catheter days. The prevalence rate of pneumothorax recorded was 0.4%, and accidental arterial puncture (simple puncture—with no dilation or cannulation) was 1.3% using the subclavian vein.

Conclusions: This report has demonstrated low complication rates for a hospital-wide service delivered by advance practice nurses. The results suggest that a centrally based service with specifically trained operators can be beneficial by potentially improving patient safety and promoting organizational efficiencies. (*Crit Care Med* 2014; 42:536–543)

Key Words: bacteremia; catheter-related infections; catheterization; central venous catheter; clinical nurse specialist; peripheral catheterization

Over 5 million central venous catheters (CVCs) are inserted each year in hospitalized patients in North America (1). Essential for many therapies, they are associated with adverse events contributing to patient morbidity and mortality (1, 2). Foremost of these adverse events is catheter-related bloodstream infection (CRBSI). Each year an estimated 250,000 potentially preventable bacteremia attributable to intravascular catheters occur in the U.S. hospitals, resulting in a cost of 2.3 billion U.S. dollars to the healthcare system and 31,000 deaths annually (1–4).

- 13 years period
- 4,560 catheters by CVAS (nurses)
- Insertion, catheter surveillance, staff education, consultancy
- Pneumothorax rate: 0.4%
- Arterial puncture rate: 1.3% (subclavian vein)
- CRBSI rate: 0.2 per 1,000 catheter days

**High training, High volume =
Low complications**

*See also p. 731.

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This work was performed at Intensive Care Unit, Liverpool Health Service, Liverpool, NSW, Australia.

The authors have disclosed that they do not have any potential conflicts of interest.

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VATS e CLABSI



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Brief Report

A comprehensive vascular access service can reduce catheter-associated bloodstream infections and promote the appropriate use of vascular access devices

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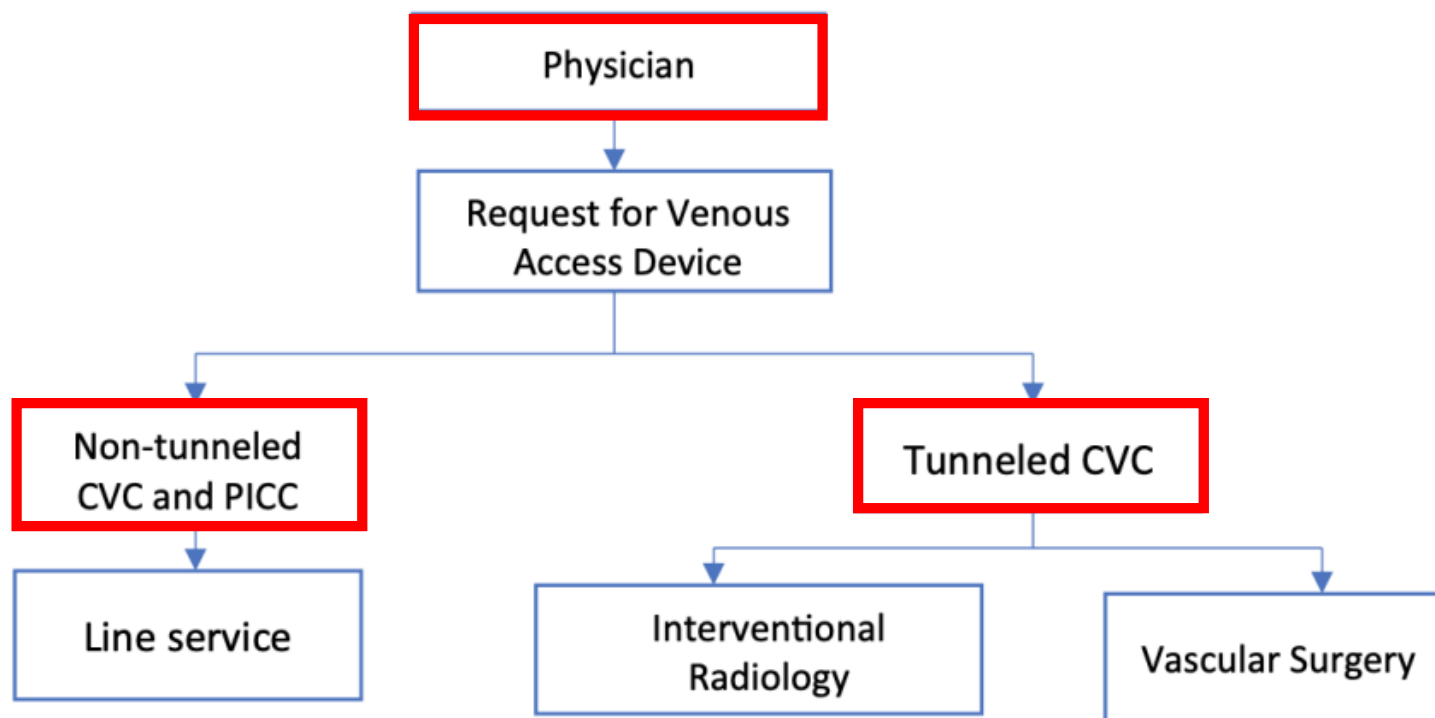
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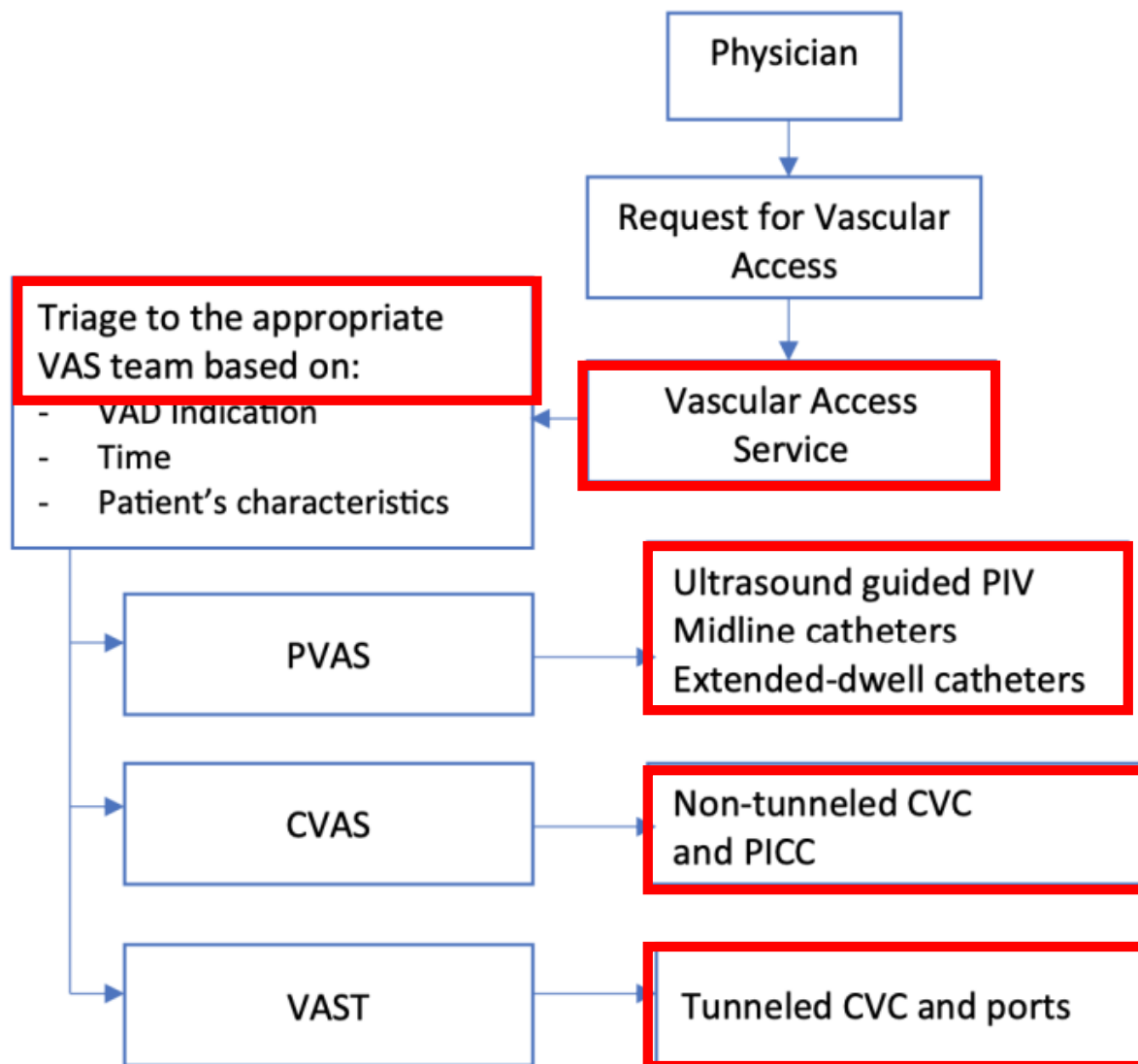
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2019

Before The Implementation of Vascular Access Service



After the implementation of Vascular Access Service



	CLABSI	Line days	Expected	Infection rate	SIR	SUR	P value
2017	102	58,321	81	1.75	1.25	0.73	.00123
2018	59	56,893	61	1.037	0.91	0.81	

- Less infections
- Less central line days



«Our team model

- *focus on the insertion of VADs*
- *uses clinical evidence and algorithms to determine the correct VAD for a particular patient, avoiding unnecessary insertion of CVC*
- *ensures adherence to best practices during insertion*
- *promotes nursing education for device maintenance, especially in patients who are at risk of complications.»*

***VAT: VERIFICA DELL' APPROPRIATEZZA, FACILITAZIONE E VERIFICA
DELL'APPLICAZIONE DEI BUNDLE, RUOLO EDUCAZIONALE***

VATS e CLABSI

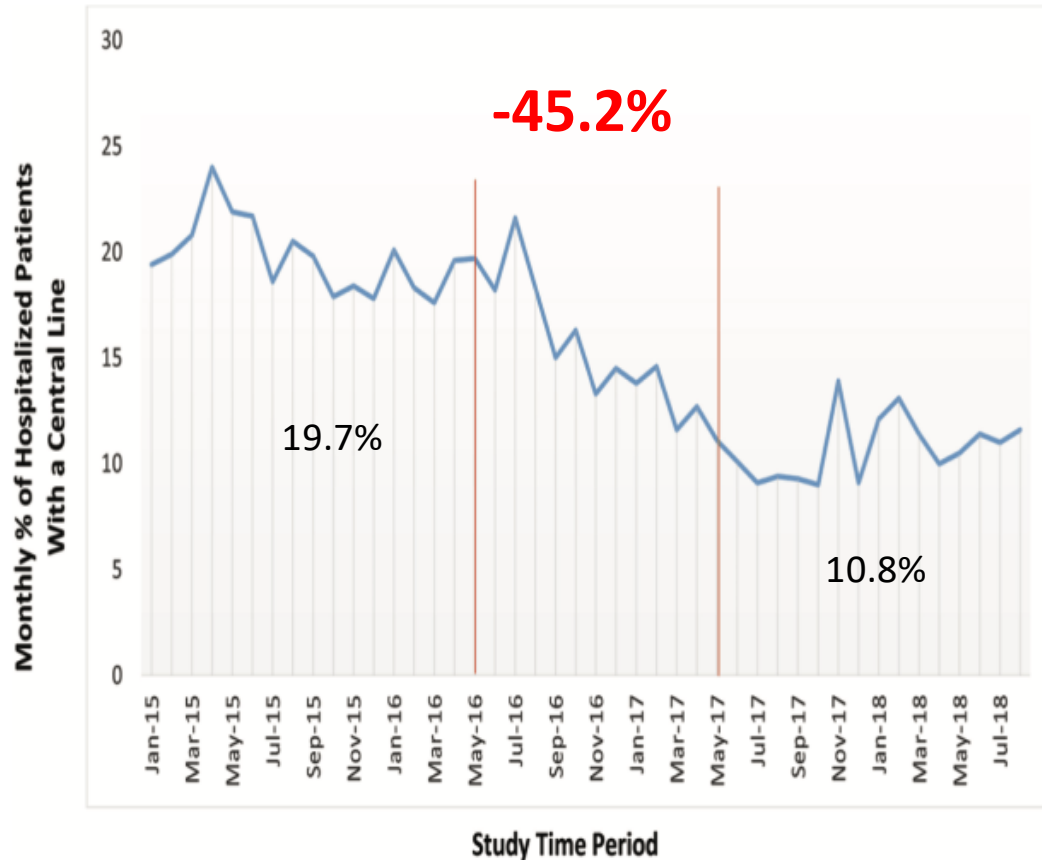
The Art and Science of Infusion Nursing

Implementation of a Vascular Access Team to Reduce Central Line Usage and Prevent Central Line-Associated Bloodstream Infections

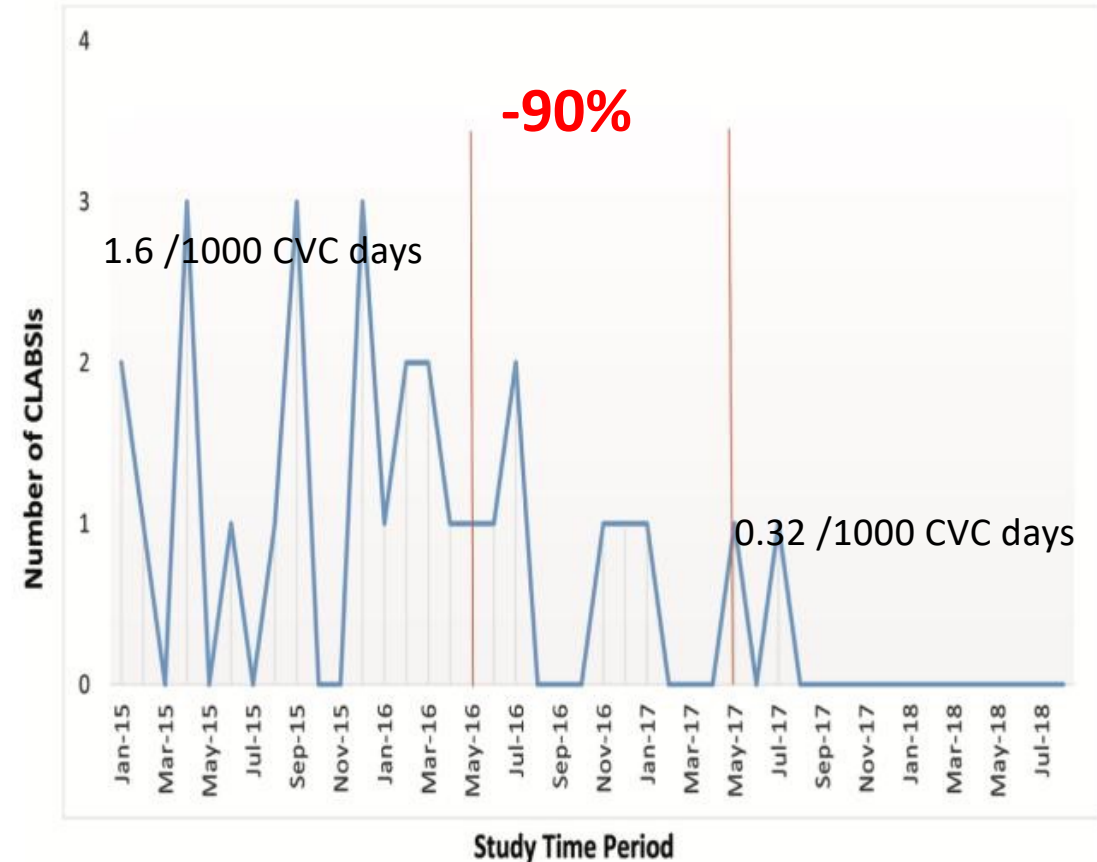
Thomas J. Savage, BSN, RN, CEN, CFRN ● Amanda D. Lynch, BSN, RN, VA-BC ●
Stacey E. Oddera, BSN, RN-BC

Savage T. JIN 2019

VATS e CLABSI



+ Appropriatezza



- Complicanze

SHEA/IDSA/APIC Practice Recommendation

Strategies to prevent central line-associated bloodstream infections in acute-care hospitals: 2022 Update

2022

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Mohamad G. Fakih MD, MPH⁷ , Lynn Hadaway MEd, RN, NPD-BC, CRNI⁸, Lisa L. Maragakis MD, MPH⁹,
Elizabeth Monsees PhD, MBA, RN, CIC^{10,11} , Shannon Novosad MD MPH¹², Naomi P. O'Grady MD¹³,
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Leonard A. Mermel DO, ScM^{18,19} 

Additional Approaches

1. Use antiseptic- or antimicrobial-impregnated CVCs (Quality of Evidence: HIGH in adult patients^{38,39,169-171} and Quality of Evidence: MODERATE in pediatric patients)^{172,173}
2. Use antimicrobial lock therapy for long-term CVCs (Quality of Evidence: HIGH)¹⁷⁷⁻¹⁸⁴
3. Use recombinant tissue plasminogen activating factor (rt-PA) once weekly after hemodialysis in patients undergoing hemodialysis through a CVC (Quality of Evidence: HIGH)¹⁹²
4. Utilize infusion or vascular access teams for reducing CLABSI rates (Quality of Evidence: LOW)^{193,194}
5. Use antimicrobial ointments for hemodialysis catheter insertion sites (Quality of Evidence: HIGH)¹⁹⁷⁻²⁰¹
6. Use an antiseptic-containing hub/connector cap/port protector to cover connectors (Quality of Evidence: MODERATE)²⁰²⁻²⁰⁸



**Cochrane
Library**

Cochrane Database of Systematic Reviews

2018

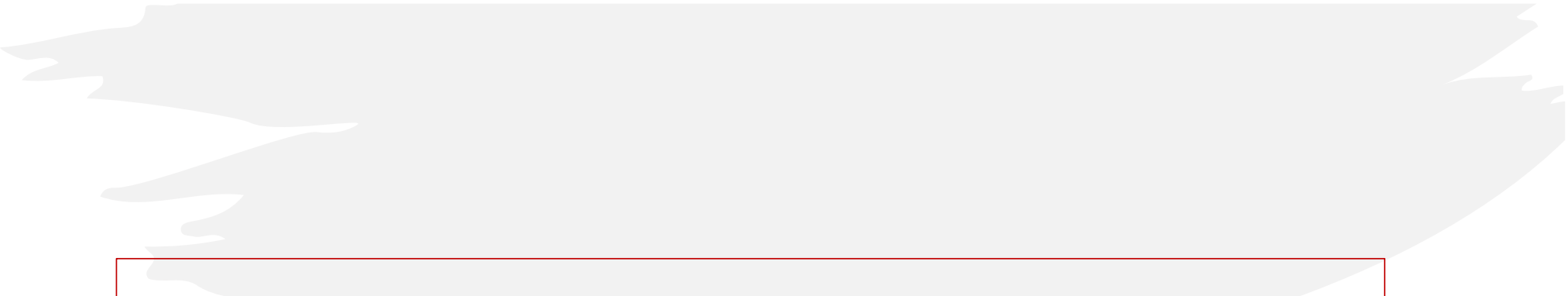
Vascular access specialist teams for device insertion and prevention of failure (Review)

Carr PJ, Higgins NS, Cooke ML, Mihala G, Rickard CM

*«At present, there are **no published RCTs** evaluating the efficacy of VAST versus the generalist approach.»*

PERCHE' ANCORA NON ABBIAMO SUFFICIENTI EVIDENZE?

- La definizione di VAT è **eterogenea**
- **RCT non è facile**: il posizionamento e gestione dell'accesso venoso è un percorso di cura, dove intervengono vari attori e molte variabili
 - la richiesta, la valutazione e l'inserimento di un VAD, la gestione e la rimozione dei VAD sono condivisi da una varietà di discipline sanitarie.
- Tuttavia, possiamo anche misurare *outcome* di processo, **indirettamente** in grado di prevedere un miglioramento degli esiti assistenziali
 - Ad esempio: effetto del VAT su appropriatezza dell'indicazione; uso di procedure; monitoraggio delle complicanze, etc.



Abbiamo delle evidenze
«indirette» che i VAT riducano le
complicanze?

The state of vascular access teams: Results of a European survey

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Gema Munoz Mozas⁵ | Vincent Piriou⁶ | Ulf Teichgräber⁷ | Didier Lepelletier⁸ |
Baudolino Mussa⁹

- Feb 2020 – Sep 2020
- 20 questions
- 1449 respondents (physicians, nurses, anesthetists, radiologists and surgeons)
- Public and private institutions ranging in size
- Spain, Italy, UK, France, Germany and the Netherlands



Survey aim

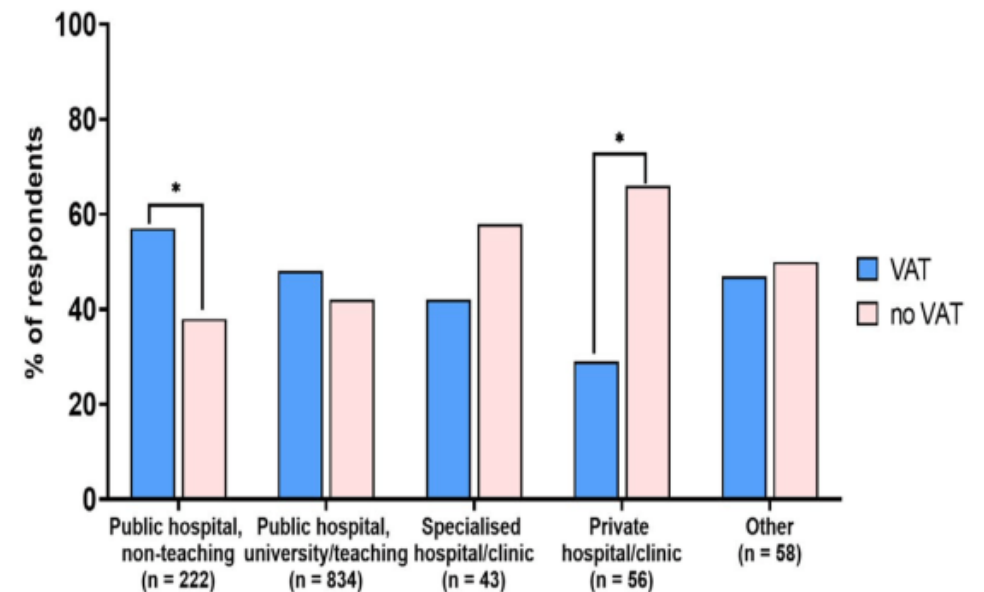
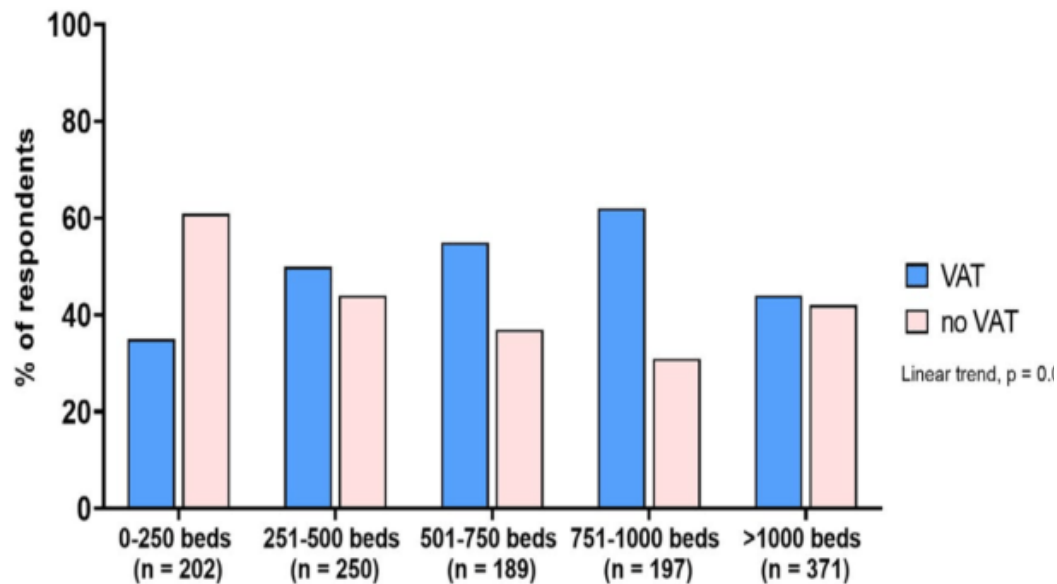
Availability of VATs across different countries and different institutions

Type of vascular access used

Potential benefits of VATs

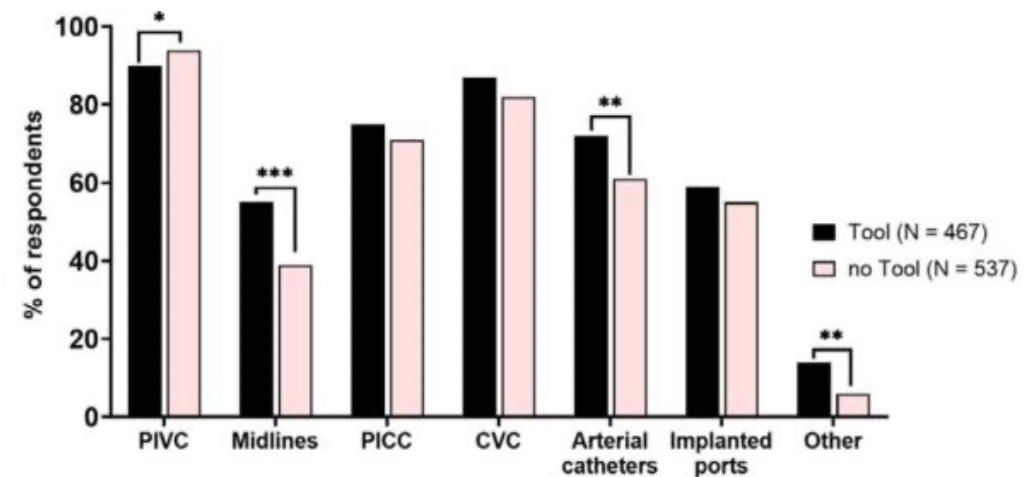
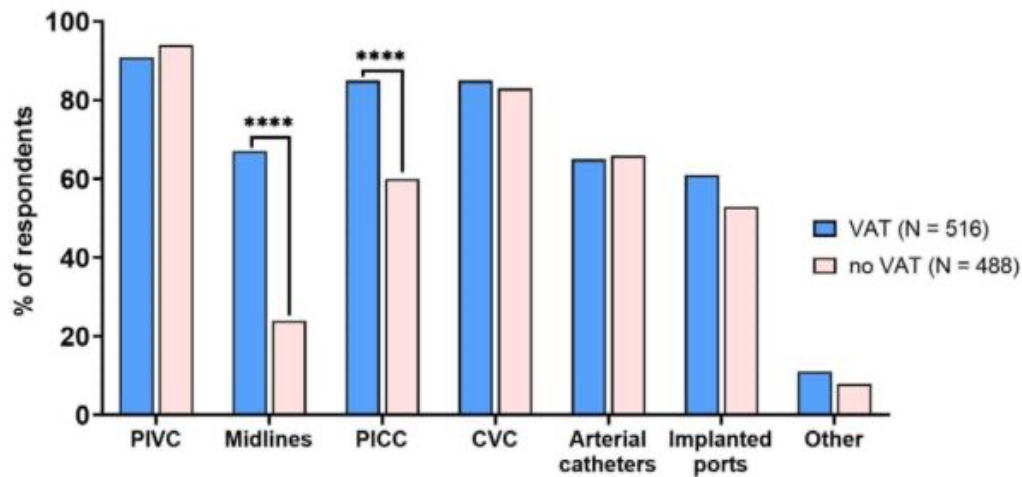
- Use of algorithms of choice
- Hospital policies in place
- Monitoring of complications
- Training

AVAILABILITY OF DEDICATED VATS VARIES BY INSTITUTION SIZE and INSTITUTION TYPE



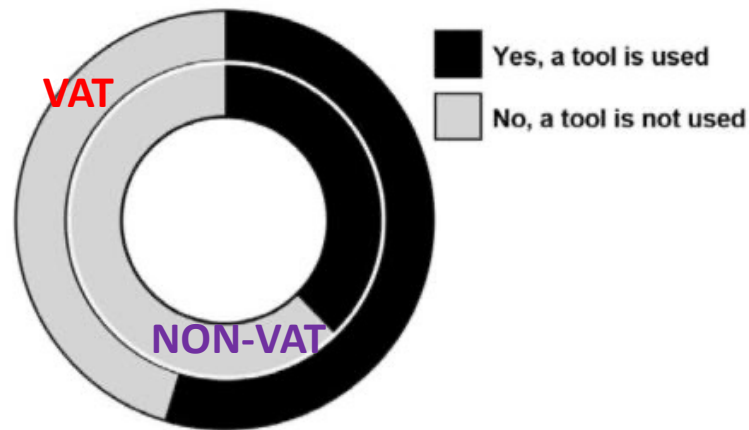
Cortes Rey N et al. Int J Clin Pract. 2021

TYPE OF VASCULAR ACCESS DEVICES USED

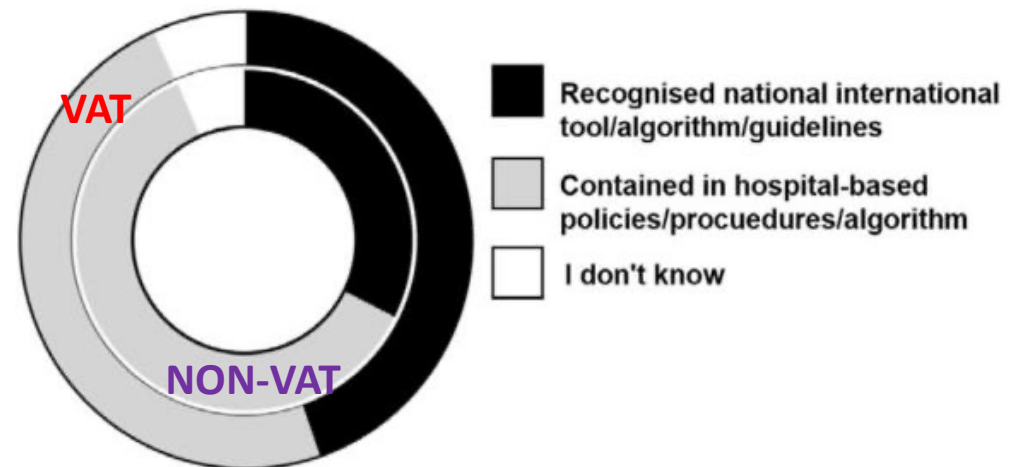


USE OF TOOLS FOR APPROPRIATE SELECTION

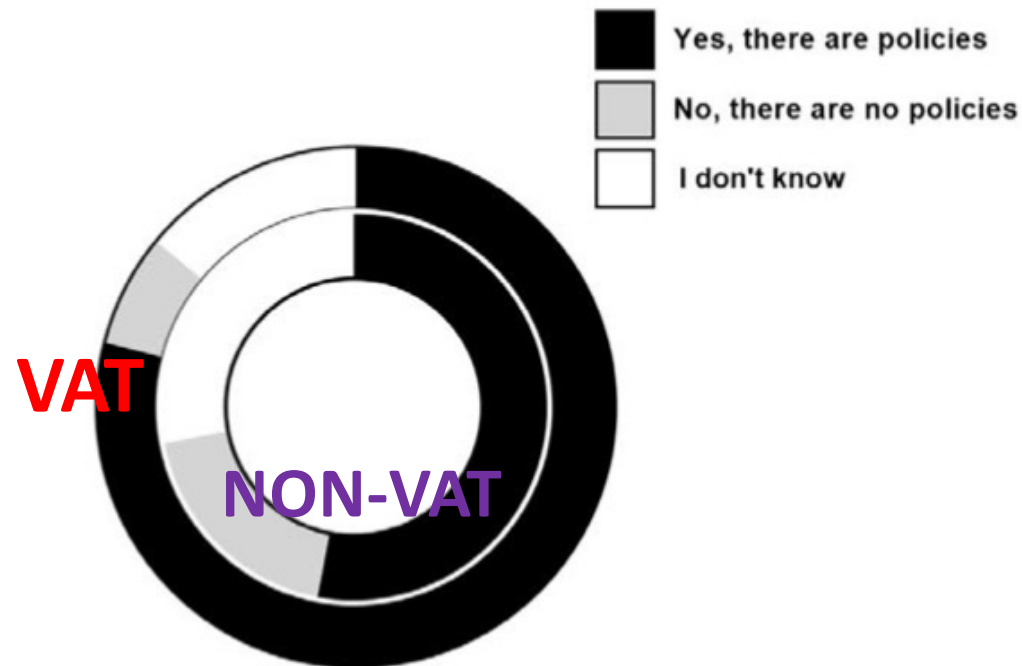
(A) Do you use a tool in your institution to help define the type of vascular access device that is most suitable for the patient and its IV therapy?



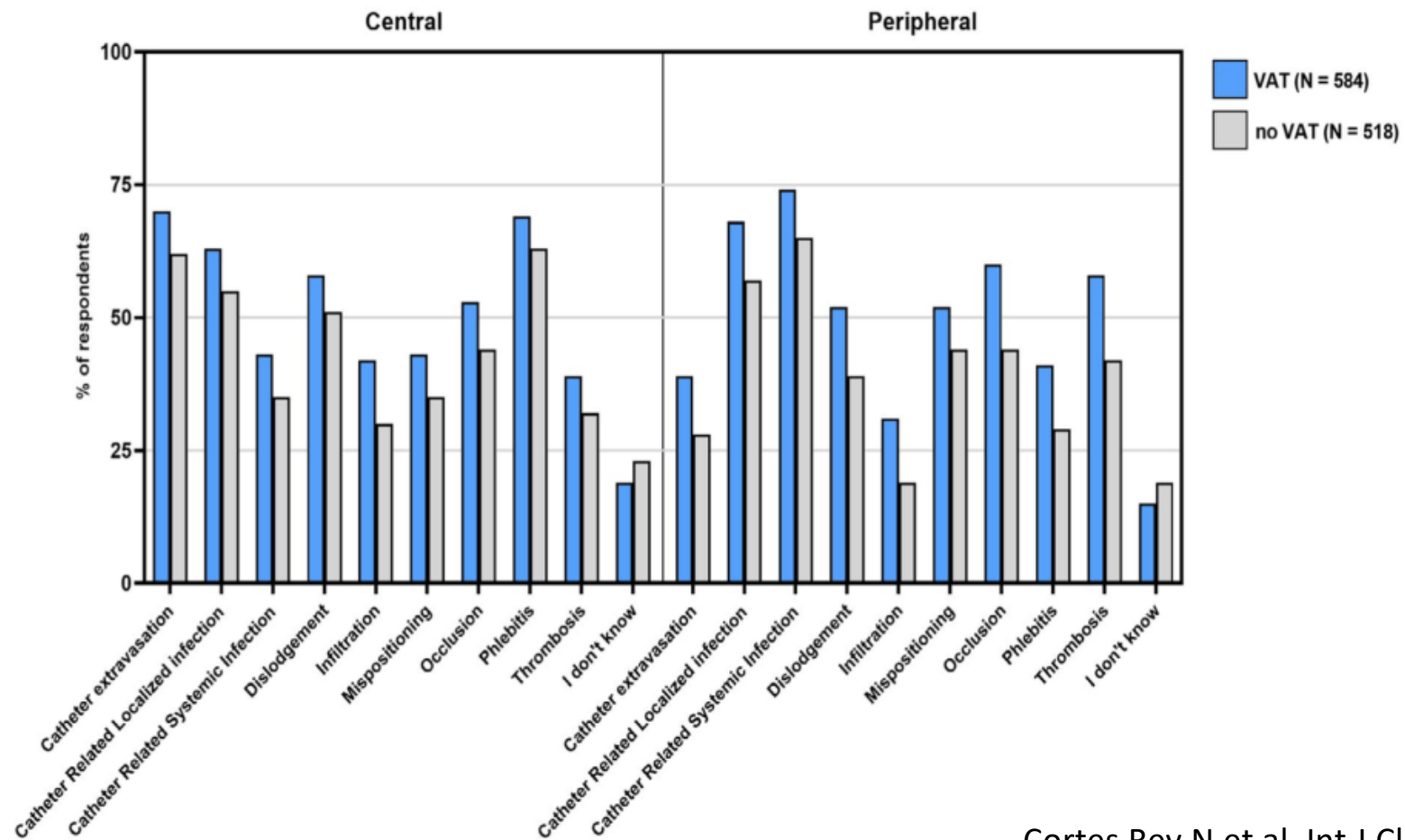
(B) Which of the following is the most appropriate description of the tool?



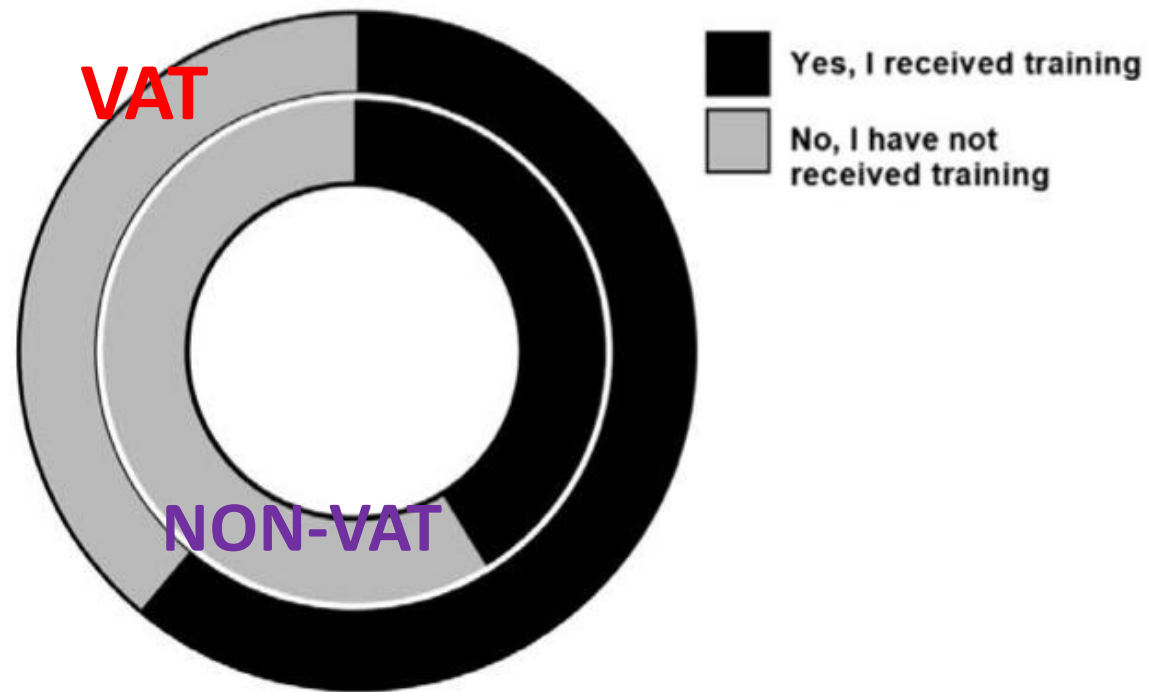
AWARENESS OF VASCULAR ACCESS POLICIES



MONITORING AND REPORTING COMPLICATIONS



TRAINING IN THE LAST THREE YEARS



CONCLUSIONI I

- Abbiamo evidenze dirette (non RCT) dei benefici dei VAT sulla riduzione delle complicate (complicate immediate, CLABSI)
- Abbiamo evidenze indirette dei benefici dei VAT (utilizzo di tool per la scelta, di procedure, monitoraggio e reporting delle complicate, training, etc.) sulla riduzione delle complicate
- Tuttavia, ulteriori studi, di alta qualità e statisticamente adeguati (prospettici, RCT) sono necessari
 - Benefici
 - Quale modello di VAT
- Obiettivo: incentivare l'istituzione dei VAT in tutti gli ospedali

CONCLUSIONI II

«Il pazienti ricoverato in ospedale è esposto a procedure invasive... riceverà vari interventi da diversi ruoli professionali tutti con diversi livelli di esperienza...

In termini semplici, un chirurgo ortopedico ripara le ossa rotte, un cardiologo si occupa del cuore, un geriatra si concentra sulla cura dei pazienti anziani e un chirurgo vascolare si concentra sulla chirurgia vascolare.

Tuttavia, il dispositivo di accesso vascolare inserito influenza i risultati clinici in ciascuna di queste specialità...».

Carr PJ. Springer Open 2019

Perché non deve essere un VAT a occuparsi dell'accesso venoso?



Azienda
Ospedaliero
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Careggi



CENTRO ACCESSI VASCOLARI



GRAZIE PER LA VOSTRA ATTENZIONE

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