



Supplemental Materials for

Optimizing vascular access for patients receiving intravenous systemic therapy for early-stage breast cancer – a survey of oncology nurses and physicians

N. LeVasseur MD, C. Stober, K. Daigle RN, A. Robinson MD, S. McDiarmid RN, S. Mazzarello, B. Hutton PhD, A.A. Joy MD, D. Fergusson PhD, J. Hilton MD, M. McInnes MD, and M. Clemons, MD

Corresponding Author:

Mark Clemons, MD
Ottawa Hospital, General Campus
Ottawa, ON, Canada
K1H 8L6
mclemons@toh.ca

Listing of Supplemental Material:

Supplemental Appendix 1: Physician Survey - Variations in the practice of central line use in Canada
Supplemental Appendix 2: Nurses Survey - Variations in the practice of central line use in Canada

Physician Survey

Variations in the use of central lines for administering chemotherapy in Canada

As you know there are 3 main choices for gaining IV access for breast cancer patients receiving chemotherapy:

Peripheral: Inserted by percutaneous venipuncture, generally into a hand or arm vein

PICC: ultrasound-guided insertion of a central catheter via the upper arm, tip resides in the distal SVC

Implanted Vascular Access Device (PORT): An implanted reservoir generally placed in the chest attached to a catheter with tip position in the central vasculature. Infusate is delivered to the reservoir via an external non-coring needle.

We are trying to understand how physicians, health care staff and patients decide which method of venous access is best for each patient. The survey is confidential and should take no more than 5 minutes to complete.

1. In which province do you currently practice? _____
2. With respect to breast cancer patients receiving chemotherapy, what is your **primary** roles?
 - a. Chemotherapy nurse
 - b. Clinic nurse (PDN)
 - c. Oncology ward nurse
 - d. Nurse Practitioner
 - e. Nurse manager
 - f. Other (please specify) _____
3. How many years have you been in your current role(s)? _____
4. How many breast cancer patients do you see, on average, in a typical week? _____

5. Do you think there is evidence showing that the following factors increase the risk of lymphedema? Please provide an answer for each row.

	Increases the risk of a swollen arm (lymphedema)	Does NOT increase the risk of a swollen arm (lymphedema)	I don't know
Sentinel lymph node biopsy			
Axillary lymph node dissection			
Obesity			
Having radiotherapy to the breast			
Having radiotherapy To the axilla			
Lifting heavy weights			
Getting infections in the skin of the arm			
Having blood tests in that arm			
Having a central line			
Having chemotherapy into the same arm as the breast cancer			
Traveling by plane			
Measuring blood pressure in that arm			

6. In your practice who tends to make the decisions about the type of access patients receive – please tick all that apply?
- Patient preference
 - Physician choice
 - Clinic nurse assesses patients veins before booking chemotherapy
 - Chemotherapy nurse decides
 - Other (please specify) _____
7. Over the last year, please indicate how many (percentage) early stage breast cancer patients you see with different types of access prior to receiving their first cycle of chemotherapy. Rows should add up to 100%

Type of chemotherapy	Peripheral Percentage of patients (%)	Peripherally inserted central catheter (PICC) Percentage of patients (%)	Implanted PORT Percentage of patients (%)	I don't see patients receiving this regimen Percentage of patients (%)
Anthracycline and taxane containing regimen (AC-T or FEC-D)				
Non-anthracycline containing regimen (TC or CMF)				
HER2+ patients. Anthracycline, taxane and herceptin regimen (FEC-DH or AC-TH)				
HER2+ patients. Getting Herceptin but no anthracycline (e.g Tc-H or TCH)				

8. What degree of proficiency do you feel you have for starting peripheral intravenous?
- a. Novice – will attempt venipuncture where veins are visible and will be successful on the 2nd attempt or less 50% of the time
 - b. Advanced beginner – will attempt venipuncture on visible and non-visible palpable veins and be successful on the 2nd attempt or less 75% of the time
 - c. Competent – will successfully obtain peripheral access in less than 2 attempts 90% of the time
 - d. Proficient – will successfully cannulate veins that can only be palpated not visualized in less than 2 attempts 90% of the time
 - e. Expert – 90% success rate on the first attempt. Seen as the go to person for patients with difficult veins.
 - f. I do not give chemotherapy

9. What percentage of patients do you estimate have poor peripheral access (“bad veins”) prior to receiving systemic therapy? _____%

10. If you had to choose one option, which type of access do you believe is best for most breast cancer patients undergoing chemotherapy WITHOUT Trastuzumab (Herceptin)?

A.

- I. Peripheral access
- II. Implanted vascular access device inserted in the chest (PORT)
- III. Peripherally inserted central catheter (PICC)
- IV. Other (please specify) _____

B. Please specify the reasons for your answer to question 9A.

11. Which type of access do you believe is best for most breast cancer patients undergoing chemotherapy WITH Trastuzumab (Herceptin)?

A.

- V. Peripheral access
- VI. Implanted vascular access device inserted in the chest (PORT)
- VII. Peripherally inserted central catheter (PICC)
- VIII. Other (please specify) _____

B. Please specify the reasons for your answer to question 10A.

12. What do you believe are the percentages of complications associated with these types of vascular access devices?

Peripheral catheter and non-tunneled CVC

	Peripheral IV	PICC	Implanted PORT
	Percentage of patients affected by this complication (%)	Percentage of patients affected by this complication (%)	Percentage of patients affected by this complication (%)
Delay in beginning first cycle of chemotherapy			
Extravasation			
Infection (skin surrounding site, catheter-tip, blood infection)			
Catheter-associated thrombosis			

13. What do you believe are the benefits of central venous access during adjuvant systemic therapy (for your patients, for the nurses, or for the health care system)

Thank you for taking the time to complete the survey. The findings of this survey will help us better serve our patients.

Nurses Survey

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