

Date: February 18, 2010

To: Alberta Health & Wellness, CDC Nurses, Infection Prevention & Control, Infectious Disease Physicians, Laboratory Managers and Directors, Medical Officers of Health, MicroNet Partners

From: ProvLab

Re: Implementation of *Spa* Typing for MRSA

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Key Message:

Effective February 22, 2010 ProvLab will implement *spa* typing as the primary molecular typing method of first clinical isolates of MRSA, to replace pulsed-field gel electrophoresis (PFGE).

What is *spa* typing?

- *Spa* typing is a sequence based method using PCR amplification and sequencing of a segment of the gene encoding the surface protein A (*spa*).
- This region contains a highly polymorphic 24-base pair variable-number tandem repeat which allows for differentiation between various MRSA strains.

Why is *spa* typing replacing PFGE?

- *Spa* typing is rapid and easy to perform offering higher throughput for anticipated increased workload with implementation of enhanced surveillance of MRSA in Alberta.
- PFGE is labour intensive, slow and difficult to standardize and interpret.
- *Spa* typing has become the national and international method for MRSA typing allowing comparisons of MRSA strains world-wide.

How is the *spa* type interpreted and reported?

- Based on the DNA sequence generated, a *spa* type will be assigned and expressed as “t” followed by a number designation (e.g. t008) and correlated with the current Canadian PFGE MRSA nomenclature and both will be reported.
 - Example – t008 correlates with CMRSA 10.
 - Transition to *spa* typing will support analysis of both new and archived MRSA typing data.
- ProvLab has extensively validated *spa* types with the conventional PFGE profiles using the Canadian MRSA nomenclature (CMRSA 1- 10, or Not Assigned) in collaboration with the National Microbiology Laboratory (NML).
 - No typing system is perfect and when required, both *spa* typing and PFGE will be used to enhance the discriminatory power.
 - NOTE: NML has recently consolidated the reporting of CMRSA 3 & 6 together as **CMRSA 3/6**.
- Clients will continue to receive weekly MRSA line lists consistent with our current reporting process.

Questions:

Contact:

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