

## 1 **Supplementary Materials**

- 2 This supplementary file contains four Supplementary Tables and two Supplementary Figures for the
- 3 manuscript “Emergence of Serotype IV Group B Streptococcus Adult Invasive Disease in Manitoba and
- 4 Saskatchewan, Canada, is Driven by Clonal Sequence Type 459 Strains” by Teatero *et al.*

## 5 Supplementary Tables

6 **Table S1: Serotype IV Group B *Streptococcus* adult invasive strains used in this study.**

Sample	Prov <sup>a</sup>	Year	Source	Age Group <sup>b</sup>	MLST <sup>c</sup>		Antibiotic Susceptibility <sup>d</sup>			Resistance-encoding gene		Read Coverage	SRA Acc N <sup>o</sup>
					CC	ST	Ery	Clin	Tet	<i>ermTR</i> allele	<i>tetM</i>		
NGBS680	MB	2010	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	141	SRS960464
NGBS686	MB	2010	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	81	SRS960463
NGBS698 <sup>e</sup>	MB	2010	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	246	SRS960467
NGBS700 <sup>e</sup>	MB	2010	Other	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	108	SRS960483
NGBS702	MB	2010	Other	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	137	SRS960499
NGBS706	MB	2010	Other	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	162	SRS960588
NGBS727	MB	2010	Blood	A	23	452	S	S	S			120	SRS960517
NGBS736	MB	2010	Other	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	148	SRS960520
NGBS737	MB	2010	Other	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	71	SRS960533
NGBS741	MB	2010	Other	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	121	SRS960535
NGBS762	MB	2011	Other	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	106	SRS960462
NGBS767	MB	2011	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	238	SRS960461
NGBS768	MB	2011	Blood	OA	23	452	S	S	S			301	SRS960455
NGBS783	MB	2011	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	133	SRS960460
NGBS788	MB	2011	Other	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	212	SRS960459
NGBS789	MB	2011	Tissue	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	151	SRS960458
NGBS791	MB	2011	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	179	SRS960457
NGBS795	MB	2011	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	192	SRS960456
NGBS798	MB	2011	Blood	OA	1	710	R	R	R	<i>ermTR</i>	<i>tetM</i>	137	SRS960473
NGBS800	MB	2011	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	270	SRS960472
NGBS801	MB	2011	Tissue	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	145	SRS960466
NGBS806	MB	2011	Blood	OA	1	459	R	R	S	<i>ermTR</i>		641	SRS960465

NGBS808	MB	2011	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	195	SRS960468
NGBS809	MB	2011	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	150	SRS960471
NGBS813	MB	2011	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	288	SRS960470
NGBS815	MB	2011	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	310	SRS960469
NGBS824	MB	2011	Blood	A	1	711	R	R	S	<i>ermTR</i>		240	SRS960487
NGBS825	MB	2011	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	213	SRS960486
NGBS830	MB	2011	Synovial Fluid	OA	1	459	R	R	S	<i>ermTR</i>	<i>tetM<sup>i</sup></i>	188	SRS960485
NGBS836	MB	2011	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	268	SRS960484
NGBS855	MB	2012	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	283	SRS960482
NGBS860	MB	2012	Other	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	196	SRS960474
NGBS877	MB	2012	Synovial Fluid	OA	1	459	R	R	S	<i>ermTR</i>		130	SRS960481
NGBS899	MB	2012	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	187	SRS960480
NGBS904	MB	2012	Other	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	147	SRS960479
NGBS933	SK	2010	Blood	OA	1	3	S	S	R		<i>tetM</i>	173	SRS960478
NGBS956	SK	2011	Tissue	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	151	SRS960477
NGBS960	SK	2011	Blood	A	1	3	S	S	R		<i>tetM</i>	147	SRS960476
NGBS964	SK	2011	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	175	SRS960475
NGBS965	SK	2011	Tissue	A	1	459	R	R	S	<i>ermTR</i>		169	SRS960500
NGBS976 <sup>f</sup>	SK	2011	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	151	SRS960498
NGBS977 <sup>f</sup>	SK	2011	Synovial Fluid	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	106	SRS960490
NGBS979	SK	2011	Tissue	OA	1	459	R	R	S	<i>ermTR</i>		133	SRS960488
NGBS984	SK	2011	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	102	SRS960497
NGBS991	SK	2011	Blood	OA	1	196	S	S	R		<i>tetM</i>	163	SRS960496
NGBS996	SK	2012	Synovial Fluid	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	155	SRS960495
NGBS1006	SK	2012	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	130	SRS960494
NGBS1009	SK	2012	Blood	OA	1	459	R	R	S	<i>ermTR</i>		153	SRS960493
NGBS1017	SK	2012	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	100	SRS960492
NGBS1018	SK	2012	Synovial Fluid	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	70	SRS960491

NGBS1021	SK	2012	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	146	SRS960508
NGBS1024	SK	2012	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	144	SRS960507
NGBS1041	SK	2012	Tissue	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	283	SRS960501
NGBS1042	SK	2012	Other	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	336	SRS960506
NGBS1043	SK	2012	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	307	SRS960505
NGBS1045	SK	2013	Tissue	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	269	SRS960504
NGBS1046	SK	2013	Tissue	A	1	459	S	S	R	<i>ermTR<sup>h</sup></i>	<i>tetM</i>	281	SRS960503
NGBS1047	SK	2013	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	294	SRS960502
NGBS1048	SK	2013	Tissue	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	302	SRS960510
NGBS1049	SK	2013	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	313	SRS960509
NGBS1050	SK	2013	Blood	OA	23	452	S	S	S			200	SRS960516
NGBS1051	SK	2013	Tissue	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	231	SRS960515
NGBS1052	SK	2013	Other	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	255	SRS960514
NGBS1053	SK	2013	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	271	SRS960512
NGBS1054	SK	2013	Tissue	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	172	SRS960513
NGBS1056	SK	2014	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	270	SRS960511
NGBS1058	SK	2014	Tissue	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	281	SRS960523
NGBS1059	SK	2014	Tissue	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	276	SRS960522
NGBS1061	MB	2012	Tissue	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	236	SRS960521
NGBS1062	MB	2012	Tissue	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	277	SRS960519
NGBS1063	MB	2012	Tissue	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	259	SRS960518
NGBS1064	MB	2012	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	264	SRS960527
NGBS1065	MB	2012	Other	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	380	SRS960524
NGBS1066	MB	2013	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	170	SRS960525
NGBS1067	MB	2013	Blood	A	1	459	R	R	S	<i>ermTR</i>		295	SRS960526
NGBS1068	MB	2013	Other	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	290	SRS960529
NGBS1071 <sup>g</sup>	MB	2013	Blood	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	181	SRS960528
NGBS1072 <sup>g</sup>	MB	2013	Tissue	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	196	SRS960531
NGBS1074	MB	2013	Blood	OA	1	459	R	R	S	<i>ermTR</i>		52	SRS960530
NGBS1075	MB	2013	Blood	OA	1	459	R	R	S	<i>ermTR</i>		273	SRS960534
NGBS1079	MB	2013	Blood	OA	23	452	S	S	S			260	SRS960532

NGBS1080	MB	2014	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	294	SRS960539
NGBS1082	MB	2014	Other	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	195	SRS960538
NGBS1083	MB	2014	Blood	OA	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	210	SRS960537
NGBS1084	MB	2014	Tissue	A	1	459	R	R	R	<i>ermTR</i>	<i>tetM</i>	93	SRS960536

7 <sup>a</sup> Prov: Province; MB: Manitoba. SK: Saskatchewan.

8 <sup>b</sup> A: Adult (age 18-59). OA: Older adult (age 60+).

9 <sup>c</sup> MLST: multilocus sequence type. CC: Clonal complex. ST: Sequence type.

10 <sup>d</sup> Ery: Erythromycin. Clin: Clindamycin. Tet: Tetracyclin. R: Resistant. S: Susceptible.

11 <sup>e,f,g</sup> Each letter identifies pairs isolates from of a presumptive single patient.

12 <sup>h</sup> Isolate contains a mutated copy of *ermTR* gene.

13 <sup>i</sup> Isolate contains a mutated copy of *tetM* gene.

**Table S2. Previously published Group B *Streptococcus* genomes used in this study.**

Strain	Geographic Origin	Sequence Type	SRA <sup>a</sup> number	Reference
NGBS009	Greater Toronto Area	1	SRS837755	[27]
NGBS010	Greater Toronto Area	1	SRS837893	[27]
NGBS021	Greater Toronto Area	1	SRS837883	[27]
NGBS022	Greater Toronto Area	1	SRS837880	[27]
NGBS025	Greater Toronto Area	1	SRS837812	[27]
NGBS028	Greater Toronto Area	1	SRS837807	[27]
NGBS030	Greater Toronto Area	1	SRS837803	[27]
NGBS035	Greater Toronto Area	1	SRS837793	[27]
NGBS044	Greater Toronto Area	1	SRS837782	[27]
NGBS054	Greater Toronto Area	1	SRS837770	[27]
NGBS063	Greater Toronto Area	1	SRS837761	[27]
NGBS068	Greater Toronto Area	1	SRS837759	[27]
NGBS092	Greater Toronto Area	1	SRS837753	[27]
NGBS093	Greater Toronto Area	1	SRS837752	[27]
NGBS094	Greater Toronto Area	1	SRS837750	[27]
NGBS099	Greater Toronto Area	1	SRS837749	[27]
NGBS107	Greater Toronto Area	1	SRS837894	[27]
NGBS110	Greater Toronto Area	1	SRS837891	[27]
NGBS117	Greater Toronto Area	1	SRS837890	[27]
NGBS134	Greater Toronto Area	1	SRS837889	[27]
NGBS164	Greater Toronto Area	1	SRS837892	[27]
NGBS171	Greater Toronto Area	1	SRS837888	[27]
NGBS172	Greater Toronto Area	1	SRS837887	[27]
NGBS177	Greater Toronto Area	1	SRS837886	[27]
NGBS180	Greater Toronto Area	1	SRS837884	[27]
NGBS200	Greater Toronto Area	1	SRS837885	[27]
NGBS210	Greater Toronto Area	1	SRS837882	[27]
NGBS229	Greater Toronto Area	1	SRS837818	[27]
NGBS234	Greater Toronto Area	1	SRS837821	[27]
NGBS241	Greater Toronto Area	1	SRS837816	[27]
NGBS244	Greater Toronto Area	1	SRS837815	[27]
NGBS246	Greater Toronto Area	1	SRS837813	[27]
NGBS267	Greater Toronto Area	1	SRS837811	[27]
NGBS272	Greater Toronto Area	1	SRS837810	[27]
NGBS273	Greater Toronto Area	1	SRS837817	[27]
NGBS275	Greater Toronto Area	1	SRS837809	[27]
NGBS279	Greater Toronto Area	1	SRS837808	[27]
NGBS283	Greater Toronto Area	1	SRS837814	[27]
NGBS287	Greater Toronto Area	1	SRS837806	[27]
NGBS288	Greater Toronto Area	1	SRS837805	[27]
NGBS298	Greater Toronto Area	1	SRS837804	[27]
NGBS303	Greater Toronto Area	1	SRS837801	[27]
NGBS321	Greater Toronto Area	1	SRS837800	[27]
NGBS323	Greater Toronto Area	1	SRS837799	[27]
NGBS325	Greater Toronto Area	1	SRS837802	[27]
NGBS330	Greater Toronto Area	1	SRS837798	[27]
NGBS331	Greater Toronto Area	1	SRS837797	[27]
NGBS332	Greater Toronto Area	1	SRS837796	[27]

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NGBS338	Greater Toronto Area	1	SRS837795	[27]
NGBS348	Greater Toronto Area	1	SRS837794	[27]
NGBS357	Greater Toronto Area	1	SRS837792	[27]
NGBS359	Greater Toronto Area	1	SRS837791	[27]
NGBS360	Greater Toronto Area	1	SRS837790	[27]
NGBS372	Greater Toronto Area	1	SRS837789	[27]
NGBS380	Greater Toronto Area	1	SRS837788	[27]
NGBS381	Greater Toronto Area	1	SRS837787	[27]
NGBS411	Greater Toronto Area	1	SRS837786	[27]
NGBS418	Greater Toronto Area	1	SRS837785	[27]
NGBS425	Greater Toronto Area	1	SRS837784	[27]
NGBS434	Greater Toronto Area	1	SRS837783	[27]
NGBS444	Greater Toronto Area	1	SRS837781	[27]
NGBS462	Greater Toronto Area	1	SRS837780	[27]
NGBS492	Greater Toronto Area	1	SRS837779	[27]
NGBS494	Greater Toronto Area	1	SRS837778	[27]
NGBS499	Greater Toronto Area	1	SRS837776	[27]
NGBS513	Greater Toronto Area	1	SRS837775	[27]
NGBS519	Greater Toronto Area	1	SRS837774	[27]
NGBS536	Greater Toronto Area	1	SRS837771	[27]
NGBS558	Greater Toronto Area	1	SRS837768	[27]
NGBS561	Greater Toronto Area	1	SRS837766	[27]
NGBS571	Greater Toronto Area	1	SRS837765	[27]
NGBS579	Greater Toronto Area	1	SRS837773	[27]
NGBS580	Greater Toronto Area	1	SRS837772	[27]
NGBS586	Greater Toronto Area	1	SRS837763	[27]
NGBS604	Greater Toronto Area	1	SRS837762	[27]
NGBS624	Greater Toronto Area	1	SRS837767	[27]
NGBS024	Greater Toronto Area	459	SRS586396	[20]
NGBS046	Greater Toronto Area	459	SRS586360	[20]
NGBS049	Greater Toronto Area	459	SRS586361	[20]
NGBS058	Greater Toronto Area	459	SRS586362	[20]
NGBS061	Greater Toronto Area	459	SRS586363	[20]
NGBS070	Greater Toronto Area	459	SRS586365	[20]
NGBS146	Greater Toronto Area	459	SRS586368	[20]
NGBS191	Greater Toronto Area	459	SRS586371	[20]
NGBS199	Greater Toronto Area	459	SRS586373	[20]
NGBS258	Greater Toronto Area	459	SRS586374	[20]
NGBS290	Greater Toronto Area	459	SRS586375	[20]
NGBS400	Greater Toronto Area	459	SRS586380	[20]
NGBS410	Greater Toronto Area	459	SRS586379	[20]
NGBS447	Greater Toronto Area	196	SRS586381	[20]
NGBS472	Greater Toronto Area	196	SRS586382	[20]
NGBS493	Greater Toronto Area	459	SRS586383	[20]
NGBS507	Greater Toronto Area	459	SRS586384	[20]
NGBS521	Greater Toronto Area	459	SRS586385	[20]
NGBS525	Greater Toronto Area	459	SRS586386	[20]
NGBS528	Greater Toronto Area	459	SRS586387	[20]
NGBS615	Greater Toronto Area	459	SRS586395	[20]
DK-NI-019	Denmark	196	ERS039632	[29]
CZ-NI-016	Czech Republic	459-like	ERS039695	[29]
CCH207800464	France	196	ERS337456	[29]

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CCH209800741	France	196	ERS337457	[29]
CCH210800418	France	459	ERS337460	[29]
CCH208800621	France	459	ERS337459	[29]

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15 <sup>a</sup> SRA: Sequence-read archive.



16 **Table S3. Serotype distribution among Group B *Streptococcus* strains causing adult invasive disease in**  
 17 **Manitoba and Saskatchewan.**

Province	Serotype <sup>a</sup>	Isolation Year <sup>b</sup>					Total
		2010	2011	2012	2013	2014	
Manitoba	Ia	7	11	11	13	6	48
	Ib	7	13	15	11	10	56
	II	5	7	6	12	6	36
	III	10	10	10	14	6	50
	IV	11	21	10	10	5	57
	V	14	16	11	22	10	73
	VI	3	1	1	1		6
	VII	1	1				2
	VIII	3	4	1	4		12
	IX			1			1
	NT	2	5	3	1	3	14
	<b>Total</b>	<b>63</b>	<b>89</b>	<b>69</b>	<b>88</b>	<b>46</b>	<b>355</b>
Saskatchewan	Ia	1	7	5	6	4	23
	Ib		7	8	6	2	23
	II	3	4	3	13	2	25
	III	7	4	5	6	3	25
	IV	1	9	11	10	5	36
	V	4	5	14	12	4	39
	VI	2	2	4	1		9
	VII	1					1
	VIII		2	1			3
	IX			1			1
	NT	1	3	3		2	9
	<b>Total</b>	<b>20</b>	<b>43</b>	<b>55</b>	<b>54</b>	<b>22</b>	<b>194</b>
<b>Grand Total</b>		<b>83</b>	<b>132</b>	<b>124</b>	<b>142</b>	<b>68</b>	<b>549</b>

18 <sup>a</sup> NT: Non-typable

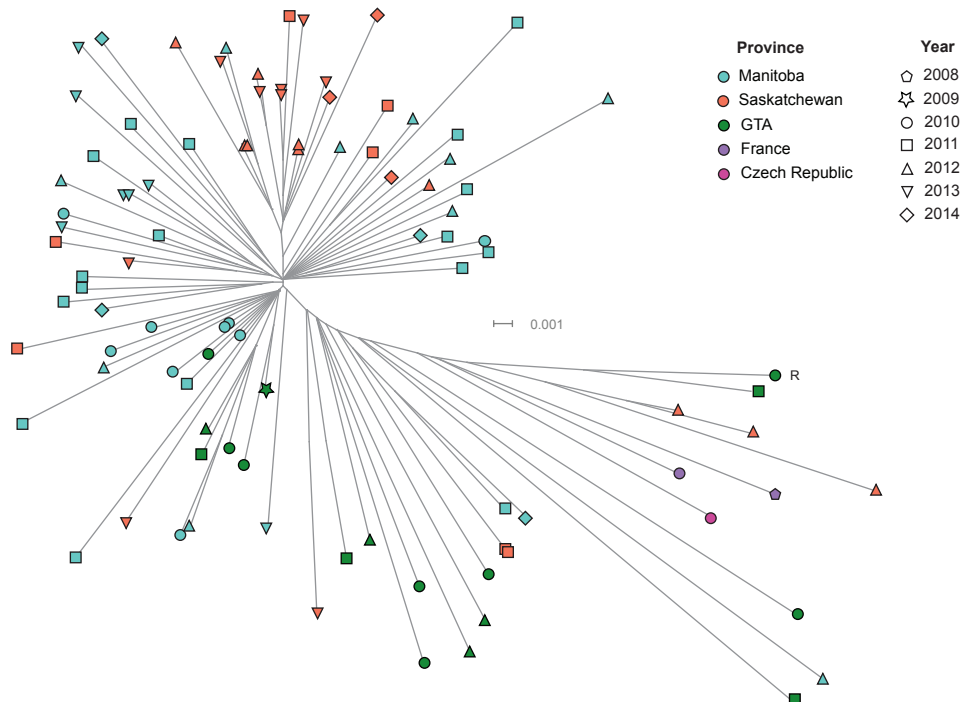
19 <sup>b</sup> Data from January 2010 to May 2014 included.

20 **Table S4. Number of MLST allele variants between sequence types (STs) of serotype IV Group**

21 **B *Streptococcus* used in this study.**

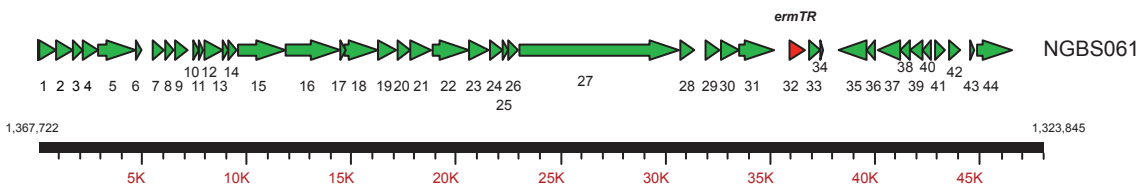
	ST3	ST196	ST452	ST459	ST710	ST711
ST3	0					
ST196	2	0				
ST452	5	7	0			
ST459	3	1	7	0		
ST710	4	2	7	1	0	
ST711	1	3	5	2	3	0

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**Figure S1.** Inferred phylogenetic relationships between ST459 Group B *Streptococcus* (GBS) strains causing adult disease. A neighbor-joining phylogenetic tree was constructed using the concatenated sequences of 1,563 unique (non-redundant) single-nucleotide polymorphic loci relative to reference strain NGBS061 identified among serotype IV ST459 GBS isolates from Manitoba (blue, n=47), Saskatchewan (orange, n=29), the Greater Toronto area (green, n=17), France (purple, n=2) and the Czech Republic (pink, n=1). Isolates from the Greater Toronto area and Europe are genetically closely related to the clone circulating in Manitoba and Saskatchewan.

R: Reference strain NGBS061.



NGBS061 (Group B Streptococcus)				
ORF	Strand	Start	Stop	Predicted Function
1	+	1367722	1368495	Phage protein
2	+	1366898	1367725	DNA replication protein
3	+	1366423	1366905	Hypothetical protein
4	+	1365692	1366426	Phage antirepressor protein
5	+	1363903	1365699	Type IV secretory pathway protein VirD4
6	+	1363609	1363884	Putative transcriptional regulator
7	+	1362567	1363085	Cytoplasmic protein
8	+	1362107	1362529	Polyketide cyclase / dehydrase and lipid transport
9	+	1361422	1362039	Cytoplasmic protein
10	+	1360887	1361198	Single-strand binding protein
11	+	1360670	1360885	Conjugative transposon membrane protein
12	+	1359796	1360659	Membrane protein
13	+	1359496	1359786	Hypothetical protein
14	+	1359084	1359494	Conjugative transposon membrane protein
15	+	1356770	1359013	Type IV secretory pathway, VirB4 component
16	+	1354183	1356762	Cell wall-associated hydrolase
17	+	1353929	1354168	Hypothetical protein
18	+	1352359	1353942	Surface protein
19	+	1351484	1352344	Membrane protein
20	+	1350798	1351409	Hypothetical protein
21	+	1349822	1350805	Hypothetical protein
22	+	1348008	1349729	DNA topoisomerase III
23	+	1347068	1348015	Site-specific DNA methylase
24	+	1346431	1347003	Hypothetical protein
25	+	1346158	1346394	Hypothetical protein
26	+	1345713	1346168	Putative phage-associated protein
27	+	1337997	1345640	Superfamily II DNA and RNA helicase
28	+	1337297	1337953	Conjugative transposon protein
29	+	1336113	1336739	TetR family transcriptional regulator
30	+	1335148	1336029	Multidrug ABC transporter ATPase
31	+	1333509	1335158	Tetronasin resistance transmembrane protein
<i>erm(TR)</i>	+	1332044	1332775	Erythromycin resistance methylase
33	+	1331303	1331827	Spectinomycin phosphotransferase
34	+	1331138	1331257	Cytidine deaminase
35	-	1329075	1330406	Type IV secretory pathway, VirD2 components (relaxase)
36	-	1328717	1329073	Conjugative transposon mobilization protein
37	-	1327474	1328547	RhuM
38	-	1326999	1327481	Conjugative transposon membrane protein
39	-	1326442	1326990	Putative Zn peptidase
40	-	1326032	1326433	Cro/C1 family transcriptional regulator
41	+	1325322	1325843	Phage transcriptional regulator, ArpU family
42	+	1324644	1325132	DNA-binding protein
43	+	1323946	1324167	Hypothetical protein
44	+	1322175	1323845	Site-specific recombinase

**Figure S2.** Genetic organization and predicted open reading frames of NGBS061 *ermTR*-containing mobile genetic element (MGE). Gene *ermTR* is indicated in red. BLASTN analysis identified 97% homology between this MGE and Group A Streptococcus ICES<sub>p</sub>1108. The start position is relative to the genome of strain NGBS061.