

## Supplementary Tables

### Background

The Scottish Group A Streptococcus Reference Laboratory is based at New Lister Building, Glasgow Royal Infirmary, 10-16 Alexandra Parade, Glasgow G31 2ER. The Reference Laboratory receives *S. pyogenes* isolates from hospitals across Scotland.

### Methodology and findings

The epidemiology of invasive group A streptococcus (iGAS) disease from sterile sites in children <15 years of age is described in Supplementary Tables 1a & 1b. The search was based on specimen site recorded from the referring laboratory, and deduplicated counts of *emm* types from children. Specimen site search terms included were restricted to sterile sites of blood, cerebro-spinal fluid, central nervous system abscess, splenic aspirates, joints, pleural effusions/empyema, lung tissue and bronchial alveolar lavages. Data going back to 2014 (Supplementary Table 1a) shows a similar annual number of *S. pyogenes* isolates from sterile sites from 2017 onwards, with the exception of 2021, when only one case was reported.

**Supplementary Table 1a. Epidemiology of *S. pyogenes* isolates referred to the Scottish Reference Laboratory from sterile sites in children <15 years.**

Year	Month												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
2014	1	4	1	1	0	3	1	0	0	1	0	2	14
2015	4	2	5	6	1	4	1	4	0	1	1	3	32
2016	5	2	5	6	4	2	2	2	0	1	1	1	31
2017	3	5	1	4	1	0	0	1	1	2	0	4	22
2018	6	2	2	5	0	0	1	0	1	2	1	4	24
2019	0	2	6	4	1	2	2	1	1	2	0	2	23
2020	4	4	6	5	0	1	0	0	0	0	1	0	21
2021	0	0	1	0	0	0	0	0	0	0	0	0	1
2022	0	2	1	0	1	0	1	1	0	4	10	1*	21*

\*Provisional data as of 20/12/2022

Examining emm types by year, emm type 1.0 was in most years the predominant strain, including in 2022 (Supplementary Table 1b), where 1.0 was the most common emm subtype identified (9 cases). Other common emm types found in 2022 included 12 (4 cases) and 12.37 (3 cases).

**Supplementary Table 1b. Epidemiology of *emm* types from *S. pyogenes* isolates referred to the Scottish Reference Laboratory from sterile sites in children <15 years of age.**

Year	<i>emm</i> type																						
	1.0	1.1	1.3	2	3	4	5	6	8	11	12	12.37	18	22	28	44	75	77	82	87	89	94	118
2014	7				5	2									1								1
2015	11		1		3	1		2	1		10	2		2									
2016	10				1	8	1	2		1			2	4							1	1	
2017	12			1	1	2		4						1				1					
2018	5	2			4	1	5	1							1	2	1					1	1
2019	3			1	2	4	4			1	2				2		1	2				1	
2020	3					1	3				5	1			3	1	2				1	1	
2021											1												
2022*	9		1			1					4	3								1		2	

\*Provisional data as of 20/12/2022

The epidemiology of iGAS from sterile respiratory sites only in children <15 years is described with *emm* types in Supplementary Table 2. The search is based on specimen site recorded from the referring laboratory and deduplicated counts of *emm* types from children. Specimen site search terms included were restricted to sterile sites of pleural effusions/empyema, lung tissue and bronchial alveolar lavage. In 2022 *emm* type 1.0 predominated, in contrast to previous years, where there was wide representation of different types.

**Table 2. Epidemiology of *emm* types from *S. pyogenes* isolates referred to the Scottish Reference Laboratory from sterile respiratory sites only in children <15 years of age.**

Year	emm type														
	1.0	1.107	1.25	2.0	3.1	3.93	5.166	5.23	6.0	12.0	18.39	28.0	44	75	89
2014	1														
2015	2				1					3					
2016	5										1				1
2017	1								1						
2018		1				1	1								
2019				1				2		1					
2020												1	1	1	
2021*															
2022**	4		1							1					

\*No isolates in this category detected in 2021

\*\* Provisional data as of 20/12/22