Epidemiology of invasive Group A streptococcal (iGAS) infections in Ireland, 2024-2025

Executive Summary

The trend of **invasive Group A Streptococcus (iGAS)** in Ireland **continued to stabilise in 2025** following the paediatric upsurge observed during **2022-2023**.

A total* of 253 cases were reported in 2025, representing a **24% decrease** from 333 cases in 2024, with a concurrent **reduction in the case fatality rate** (CFR). The decline was most pronounced among children, with paediatric cases decreasing from 78 (23% of all cases) in 2024 to 48 (19% of all cases) in 2025, a reduction of **38%**.

Although case numbers reported in 2024 and 2025 remained higher than pre-pandemic level, interpretation of long-term trends should consider the introduction of a revised, **more sensitive, iGAS case definition in December 2022**. This expanded definition was implemented during the national iGAS upsurge response and has likely contributed to increased case ascertainment compared with previous years.

Further information on this upsurge can be found in the ***National Incident Report*** which was produced by the multi-disciplinary Incident Management Team (IMT).

The **age distribution of cases remained broadly stable**, with a median age of 40 years in 2024 and 41 years in 2025 (range: <1 to 95 years).

Cellulitis remained the most commonly reported clinical presentation, accounting for over half of all notifications. Alcohol misuse and injecting drug use continued as important risk factors in adult cases.

Molecular surveillance identified emm49 in notifiable cases for the first time in Ireland in 2025 and as the predominant emm-type in 2025 in Ireland, representing 27% of isolates. Epidemiological analyses indicate that invasive emm49 infections **are associated with specific vulnerabilities, including underlying medical comorbidities, housing instability or homelessness, and/or a history of alcohol misuse.**

Overall, the data suggest a return towards pre-upsurge epidemiological patterns, characterised by declining case numbers and fewer paediatric infections

*Based on epidemiological (epi) date – see Appendix 2

Key points

Overall Case Numbers

Total iGAS cases decreased from 333 in 2024 to 253 in 2025

Crude Incidence Rate (CIR)

The overall Crude Incidence Rate (CIR) fell from 6.5 in 2024 to 4.9 in 2025

Paediatric Cases

Paediatric cases fell by 38% (78 cases in 2024 versus 48 cases in 2025)

Case Fatality Rate (CFR)

Overall Case Fatality Rate (CFR) reduced between 2024 and 2025

Cases by Sex

2025

59% 41%

Median Age

Median age of 40 years in 2024 and 41 years in 2025 (range: <1 to 95 years).

Key points

Clinical Presentation

Cellulitis was the most common presentation accounting for over half of cases in 2024 and 2025

Clinical Risk Factors

Skin wounds/lesions

The most common clinical risk factors in both years were presence of skin or wound lesions, accounting for half of cases where a risk factor was identified

Varicella/Chickenpox

There was a significant drop in the number of cases where Varicella was reported as a risk factor

Social Risk Factors

Alcohol misuse and injecting drug use were common risk factors in 2024 and 2025

ICU Admissions

The number of cases requiring ICU admission decreased in 2024 and 2025

emm typing

First reported in 2025, emm49 was the predominant emm-type accounting for 27% of isolates

Appendix

Appendix 1. Current* Case Definition for Invasive Group A Streptococcal Infection (iGAS)

*as of: 22 December 2022

Clinical criteria

Severe clinical presentation consistent with iGAS or severe GAS infection such as;

- streptococcal toxic shock syndrome (STSS)
- necrotising fasciitis
- pneumonia
- septic arthritis
- meningitis
- peritonitis
- osteomyelitis
- myositis
- puerperal sepsis
- cellulitis

accompanied by a systemic presentation necessitating hospitalisation.

Epidemiological criteria

Suspected case has an epidemiological link to a confirmed case of iGAS

Laboratory criteria

- Laboratory criteria
  - Isolation of group A streptococcus (GAS), **by culture or molecular methods** (such as PCR), from a normally sterile body site (blood, cerebrospinal fluid, pleural-peritoneal-pericardial fluids, joint aspirate, bone, or deep tissue or abscess at operation or post-mortem)
  - Isolation of GAS from a non-sterile site (e.g. throat, sputum, vagina)

Case classification

1. Confirmed case

1. Any person meeting the laboratory criteria of (1) above

   OR

2. Any person meeting the laboratory criteria of (2) above PLUS the clinical criteria described above

2. Probable case

1. Any person meeting the clinical criteria above

   PLUS

   1. the epidemiological criteria above

   2. **OR**

   3. the clinician considers that GAS is the most likely cause

Appendix 2. Key Definitions

iGAS Case Definition

iGAS is statutorily notifiable in Ireland under S.I. No. 707/2003 of Infectious Diseases Regulations. The iGAS surveillance case definition was updated in December 2022.
This is available in Appendix 1.

CIDR

CIDR, or Computerised Infectious Disease Reporting, is an information system developed to manage the surveillance and control of infectious diseases in Ireland.
For more information on CIDR, see
https://www.hpsc.ie/cidr/

Methods

The figures presented in this summary are based on data extracted from CIDR on **30th June 2026**. Additional data on emm-typing and antimicrobial resistance were provided by the Irish Meningitis and Sepsis Reference Laboratory at the Children's University Hospital, Temple Street.

Epidemiological date

The **epidemiological date (or Epi-date)** is the date that most closely corresponds to when the iGAS disease episode occurred. For the purpose of examining trends, the epidemiological date is used in this report. The epi-date for a case is based on the earliest of dates available on the case and taken from date of onset of symptoms, date of diagnosis, laboratory specimen collection date, laboratory received date, laboratory reported date, or event creation date/notification date on CIDR. Usually there is very little difference between these two dates, but occasionally there may be a lag in reporting to Departments of Public Health, such as when there is a surge in cases (as seen in December 2022). Using this date, rather than event creation/ notification date, adjusts for any delays in testing/notification.

Crude Incidence Rate (CIR)

The **Crude Incidence Rate (CIR)** is a basic public health metric that measures the total number of new disease cases or health events divided by the total population at risk during a specific time period. For the purposes of this report, CIR per 100,000 population is used i.e. the total number of new disease cases diagnosed in 2024 and 2025, divided by the total population, and then scaled to a standard group of 100,000 people.

Appendix 2. Key Definitions

Invasive Group A Streptococcal (iGAS; Streptococcus pyogenes) disease is an acute potentially life-threatening infection. Three clinical syndromes are recognised:

- Streptococcal toxic shock syndrome (STSS), which is characterised by hypotension and two or more of the following: renal impairment, coagulopathy, liver dysfunction, adult respiratory distress syndrome, generalised erythematous rash that may desquamate and soft tissue necrosis (necrotising fasciitis, myositis, gangrene)

- Necrotising fasciitis

- Bloodstream infection (BSI) with or without an identifiable focus of infection, such as meningitis, pneumonia, cellulitis, peritonitis, puerperal sepsis, septic arthritis, myositis or an identifiable focus of infection without bacteraemia, STSS or necrotising fasciitis

Appendix 3. Summary of iGAS CFR* by age group and epidemiological year

	All age groups		All children		All adults	
Year	N of cases	CFR	N of cases	CFR	N of cases	CFR
2022	123	10.6%	48	8.3%	74	12.2%
2023	533	4.3%	223	3.6%	310	4.8%
2024	333	4.2%	78	5.1%	255	3.9%
2025	253	2.0%	48	2.1%	205	2.0%

The overall CFR decreased in 2025 and was the lowest in the four year period for both adults and children

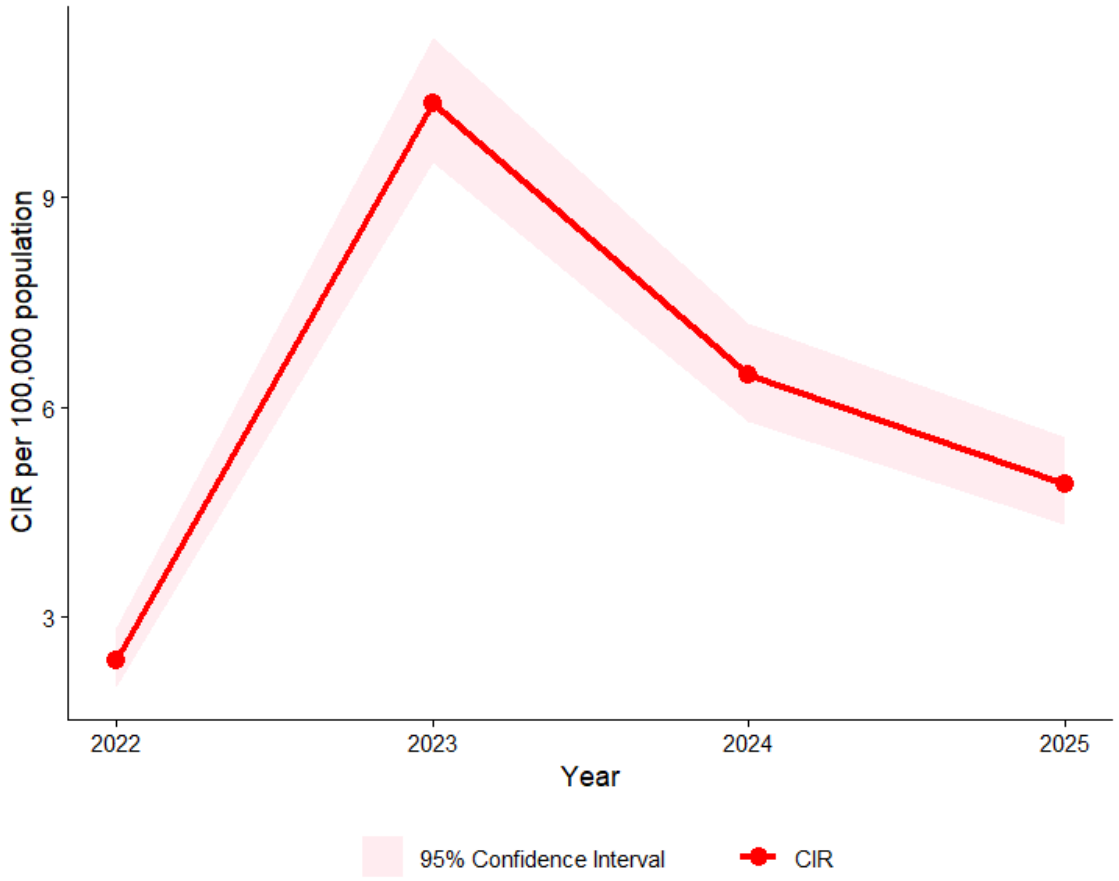
*CFR=case fatality rate

Note: The large reduction in the CFR since 2022 may be in part due to the change in case definition

Appendix 4. iGAS characteristics by epidemiological date: demographic data

	2022	2023	2024	2025
Data by epidemiological date				
N of cases	123	533	333	253
of which Probable	7	21	14	11
CIR per 100,000 population	2.39	10.35	6.47	4.91
Cases for which enhanced data provided* (%)	112 (91%)	475 (89%)	303 (91%)	240 (95%)
Patient demographics				
Male (%)	75 (61%)	299 (56%)	191 (57%)	149 (59%)
Mean age	35	36	40	41
Median age	32	36	40	41
Age range	0-96	0-99	0-95	0-95
Paediatric cases (aged <18 yrs) (%)	48 (39%)	223 (42%)	78 (23%)	48 (19%)
Older cases (aged 65+ yrs) (%)	27 (22%)	138 (26%)	69 (21%)	51 (20%)

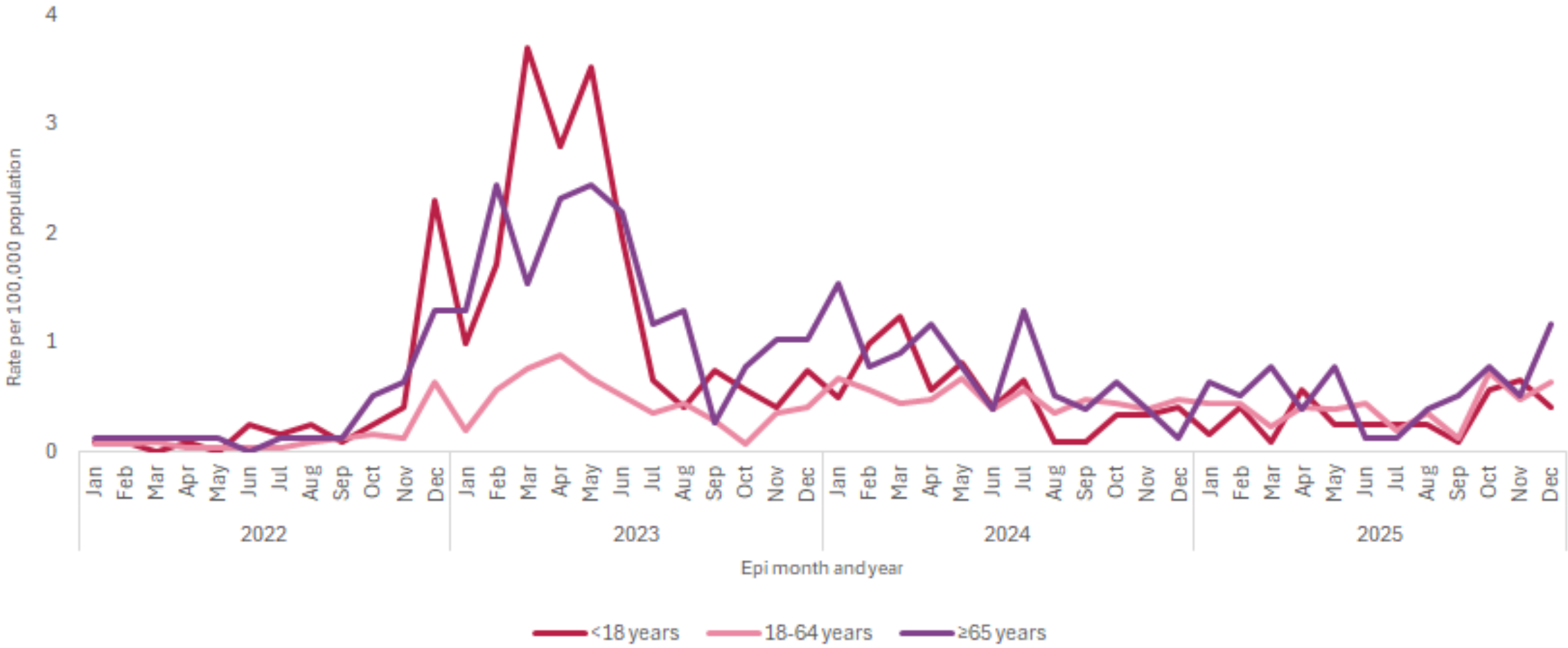
Appendix 5. iGAS Crude Incidence Rate (CIR) by year



Year	CIR per 100,000	95% Confidence Interval
2022	2.4	2.0-2.9
2023	10.4	9.5-11.3
2024	6.5	5.8-7.2
2025	4.9	4.3-5.6

CIR fell from 6.5 in 2024 to 4.9 in 2025

Appendix 6. iGAS Crude Incidence Rate (CIR) by age group and month, year



Appendix 7. iGAS characteristics by epidemiological date – Clinical Presentation

	2022	2023	2024	2025
Data by epidemiological date				
N of cases	123	533	333	253
*Clinical presentation**				
Data on clinical presentation (%)	97 (79%)	394 (74%)	256 (77%)	193 (76%)
Streptococcal Toxic Shock-like Syndrome (STSS) without NF (%)	18 (19%)	44 (11%)	18 (7%)	15 (8%)
Necrotising fasciitis (NF) without STSS (%)	2 (2%)	18 (5%)	16 (6%)	10 (5%)
STSS and NF (%)	5 (5%)	12 (3%)	7 (3%)	3 (2%)
Bacteraemia with/without focal presentation (%)	52 (54%)	162 (41%)	95 (37%)	83 (43%)
Other focal presentation(s) with no bacteraemia (%)	20 (21%)	158 (40%)	120 (47%)	82 (42%)
Individual clinical presentations				
Bacteraemia (%)	71 (73%)	201 (51%)	112 (44%)	95 (49%)
Cellulitis (%)	33 (34%)	216 (55%)	136 (53%)	109 (56%)
STSS (%)	23 (24%)	56 (14%)	25 (10%)	18 (9%)
Pneumonia (%)	2 (2%)	5 (1%)	4 (2%)	3 (2%)
Septic arthritis (%)	9 (9%)	15 (4%)	19 (7%)	11 (6%)
Necrotising fasciitis (%)	7 (7%)	30 (8%)	23 (9%)	13 (7%)
Peritonitis (%)	2 (2%)	3 (1%)	0 (0%)	2 (1%)
Myositis (%)	3 (3%)	6 (2%)	3 (1%)	3 (2%)
Erysipelas (%)	1 (1%)	5 (1%)	2 (1%)	1 (1%)
Meningitis (%)	1 (1%)	7 (2%)	0 (0%)	0 (0%)

*A case may present with one or more of the individual clinical presentations listed

Cellulitis was the most common presentation, accounting for 53% of cases in 2024 and 56% of cases in 2025, up from just 34% of cases in 2022

Note: The updated case definition my account for some of the increase in cellulitis seen in 2024 and 2025, whereby non-invasive skin infections were reported as invasive disease

Appendix 8. iGAS characteristics by epidemiological date - Risk Factors

	2022	2023	2024	2025
Data by epidemiological date				
N of cases	123	533	333	253
*Risk factors**				
Data on risk factors (%)	72 (59%)	407 (76%)	254 (76%)	202 (80%)
Skin lesions/wounds (%)	24 (33%)	177 (43%)	128 (50%)	104 (51%)
Diabetes (%)	10 (14%)	42 (10%)	17 (7%)	20 (10%)
Malignancy (%)	6 (8%)	16 (4%)	12 (5%)	9 (4%)
Childbirth (%)	2 (3%)	13 (3%)	16 (6%)	6 (3%)
Varicella (%)	3 (4%)	51 (13%)	6 (2%)	2 (1%)
Alcohol misuse (%)	5 (7%)	22 (5%)	19 (7%)	31 (15%)
Steroid use (%)	4 (6%)	16 (4%)	6 (2%)	5 (2%)
Injecting drug user (%)	6 (8%)	6 (1%)	12 (5%)	27 (13%)
Non-steroid anti-inflammatory drug use (%)	1 (1%)	9 (2%)	6 (2%)	3 (1%)
No identified risk factor (%)	27 (38%)	132 (32%)	73 (29%)	55 (27%)

*A case may present with one or more of the individual risk factors listed

The proportion of cases reporting alcohol misuse and injecting drug use increased in 2025 and were the second and third most common risk factors reported

Varicella as a risk factor fell from 13% of cases in 2023 to just 1% of cases in 2025. This decrease may be attributed to the fall in paediatric cases

Appendix 9. iGAS characteristics by epidemiological date – Clinical management and Severity

	2022	2023	2024	2025
Data by epidemiological date				
N of cases	123	533	333	253
Outcome				
RIP/GAS main cause or contributory or Died/due to this ID (%)				
All cases (%)	13 (11%)	23 (4%)	14 (4%)	5 (2%)
STSS/all cases (% RIP in cases with STSS)	7 (6%)	7 (1%)	5 (2%)	0 (0%)
Severity				
Data on ICU admission (%)	107 (87%)	453 (85%)	285 (86%)	225 (89%)
Admitted to ICU (%)	28 (26%)	99 (22%)	55 (19%)	35 (16%)
Data on surgical intervention (%)	93 (76%)	415 (78%)	274 (82%)	220 (87%)
Surgical intervention required (%)	33 (35%)	168 (40%)	131 (48%)	92 (42%)

Overall, the number of deaths associated with iGAS reduced in 2025 and was the lowest in the four year period. There were no deaths attributed to Severe Toxic Shock Syndrome (STSS) reported in 2025

Appendix 10. iGAS characteristics by epidemiological date – *emm* typing

	2022	2023	2024	2025
Data by epidemiological date				
N of cases	123	533	333	253
Typing data				
Isolates with emm-type (%)	86 (70%)	345 (65%)	214 (64%)	174 (69%)

emm-type	2022	2023	2024	2025
emm49	0 (0%)	0 (0%)	0 (0%)	47 (27%)
emm4	6 (7%)	27 (8%)	25 (12%)	18 (11%)
emm108	0 (0%)	0 (0%)	16 (7%)	11 (7%)
emm28	5 (6%)	13 (4%)	28 (13%)	17 (10%)
emm89	6 (7%)	7 (2%)	9 (4%)	14 (8%)
emm1	35 (41%)	181 (52%)	28 (13%)	8 (4%)
emm22	0 (0%)	3 (1%)	6 (3%)	6 (3%)
emm3	0 (0%)	6 (2%)	30 (14%)	3 (2%)
emm6	1 (1%)	2 (1%)	10 (5%)	8 (4%)
emm77	1 (1%)	8 (2%)	3 (1%)	3 (2%)
emm12	13 (15%)	67 (19%)	10 (5%)	1 (1%)
other emm-types	19 (22%)	31 (9%)	49 (23%)	38 (22%)
Total	**86 (100%)**	**345 (100%)**	**214 (100%)**	**174 (100%)**

*emm*49 was detected for the first time in notifiable cases in Ireland in 2025 and was the most common *emm* type that year accounting for 27% of typed cases.

Subtype *emm*49.8 accounted for 83% (n = 39/47) of typed cases

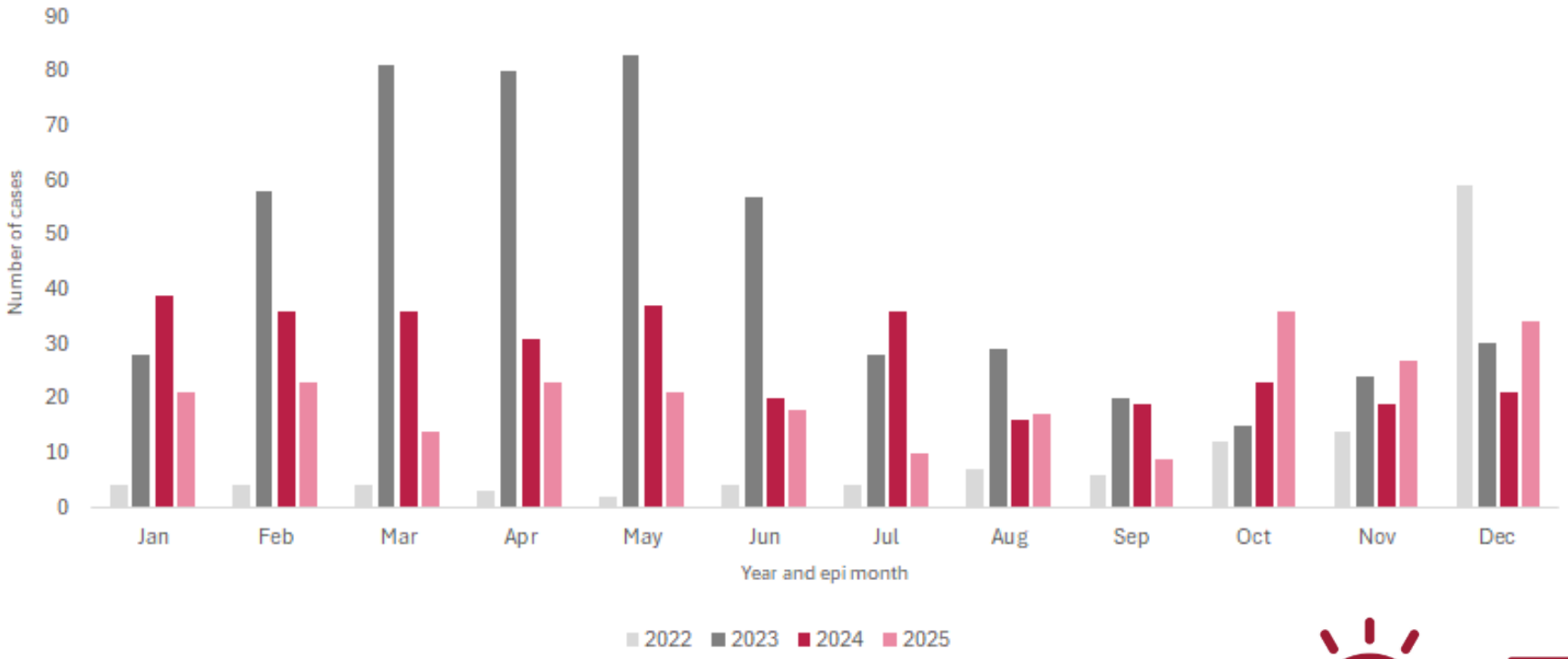
*first detected in Ireland in 2024 in two cases which did not meet iGAS case definitions for notification

Appendix 11. Geographical distribution of iGAS cases

	2024		2025	
Health Region	**N**	**CIR**	**N**	**CIR**
HSE Dublin & NE	96	8.1	54	4.5
HSE Dublin & M	43	4.0	63	5.8
HSE Dublin & SE	54	5.6	43	4.4
HSE SW	61	8.2	39	5.3
HSE MW	27	6.5	20	4.8
HSE W & NW	52	6.8	34	4.5
Total	**333**	**6.5**	**253**	**4.9**

N, number of cases;
CIR, crude incidence rate per 100,000 population;
Population/Denominator Data taken from 2022 Census of Population for Ireland, CSO

Appendix 12. Seasonal variation of iGAS cases



The peak month for notifications was January in 2024 and October in 2025, reflecting the seasonal nature of iGAS

Acknowledgements

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Feedback and specific queries about this report are welcome via amr@hpsc.ie