



# **Recent increase in drug resistant shigella among gay, bisexual and other men who have sex with men (gbMSM) in Ireland: Outbreak Response**

9<sup>th</sup> November 2023

# Acknowledgements

Thank you to all those who provided the data for this slide set, particularly the National Salmonella, Shigella and Listeria Reference Laboratory (NSSLRL); STI clinics; General Practice; Other notifying physicians; Other clinical staff; Laboratories and the Departments of Public Health.

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# Overview



Shigellosis infection is transmitted via the faecal-oral route, either through consumption of contaminated food or water or through direct person-to-person spread.

Sexual transmission among gay, bisexual and other men who have sex with men (gbMSM) is a key feature of the disease in Ireland and elsewhere.

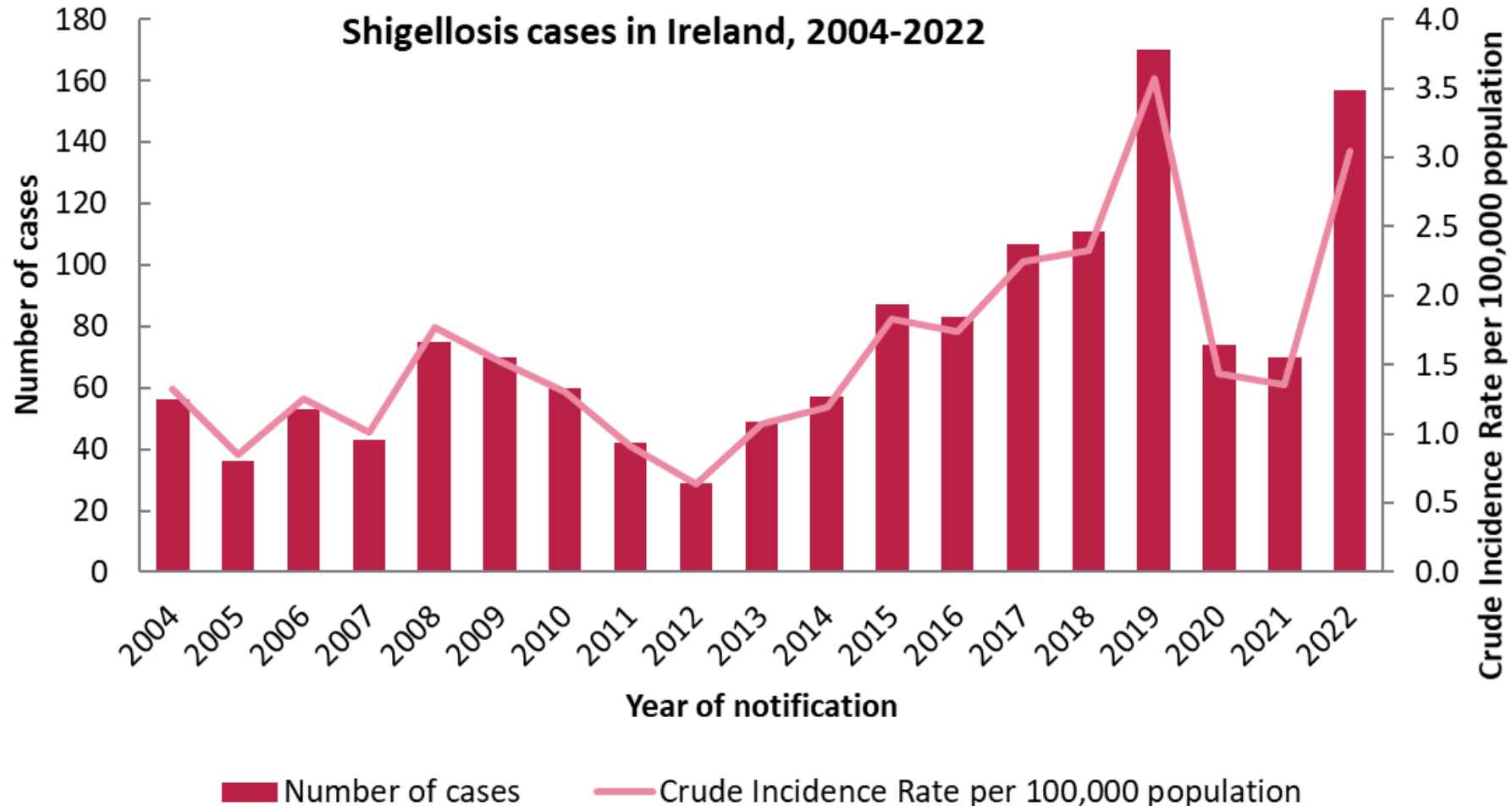
On March 22<sup>nd</sup> 2023, HPSC issued an alert to Public Health and clinical colleagues to raise awareness of an upsurge in cases, particularly among gbMSM.

An Incident Management Team (IMT) which was convened in April 2023 continues to meet on a regular basis.

This slide set provides an update on the epidemiology and antimicrobial resistance patterns of shigellosis cases reported up to Week 39 2023.

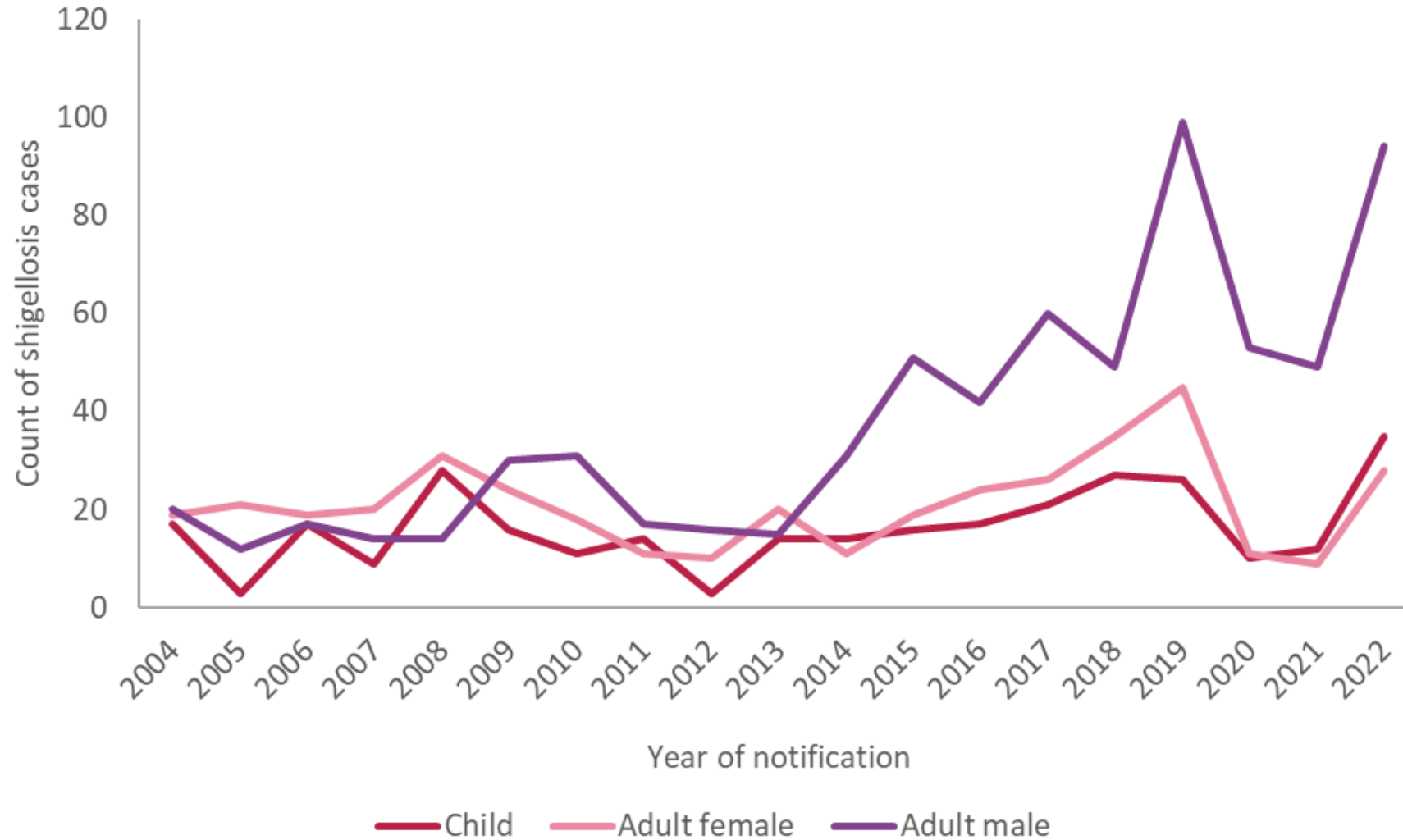
# Shigellosis: National Notification Rate in Ireland

Generally increasing trend since 2013



# Shigellosis cases in Ireland by sex and age, 2004-2022

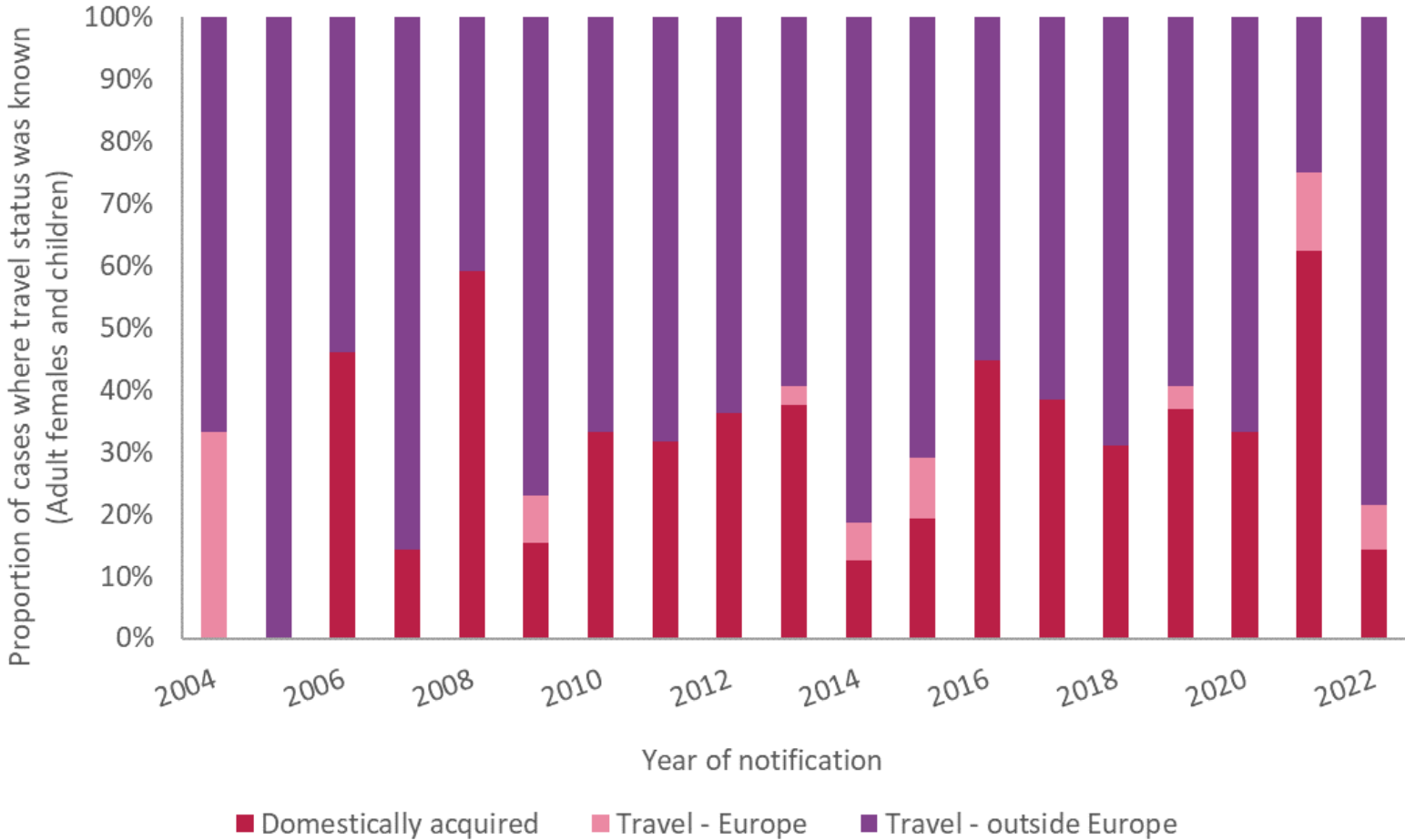
Generally increasing trend among adult males since 2013



# Shigellosis notifications by international travel status, 2004-2022



Historically cases in Ireland were associated with travel to destinations outside of Europe and this remains the case among children and adult females



# Shigellosis notifications by international travel status, 2004-2022

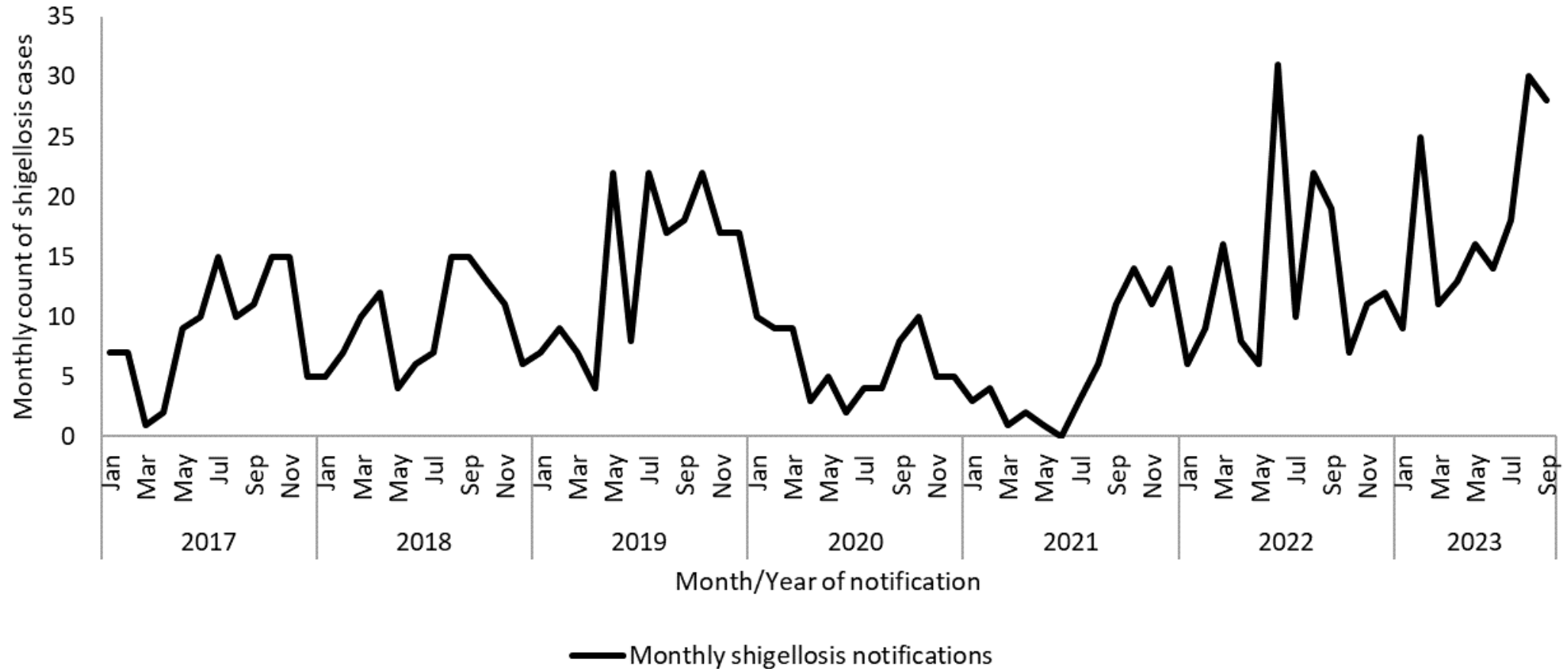


Increasingly we see a trend of domestically-acquired cases and cases acquired in other European countries among adult males



# Shigellosis cases, 2017-2023\*

Alert raised in Feb 2023 due to increasing case number of cases

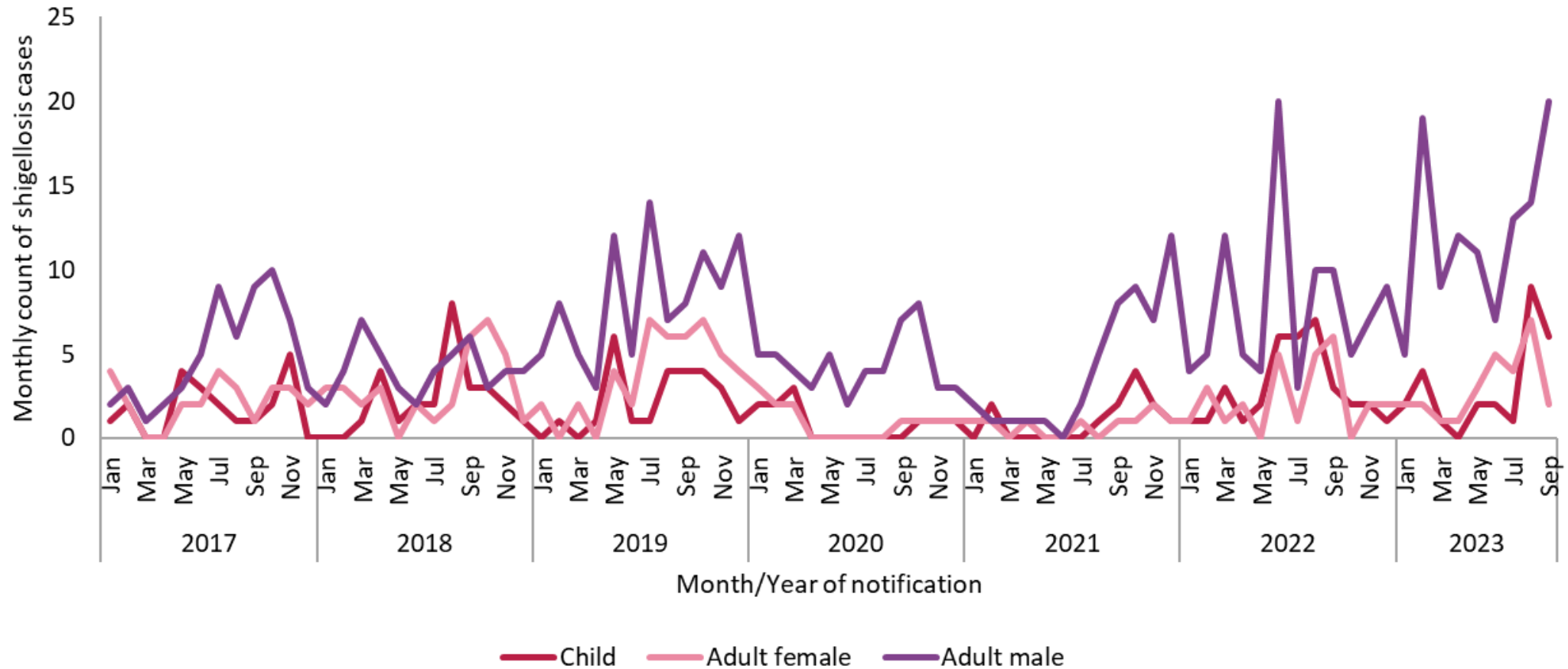


\*Jan-Sep 2023



# Shigellosis cases by sex and age, 2017-2023\*

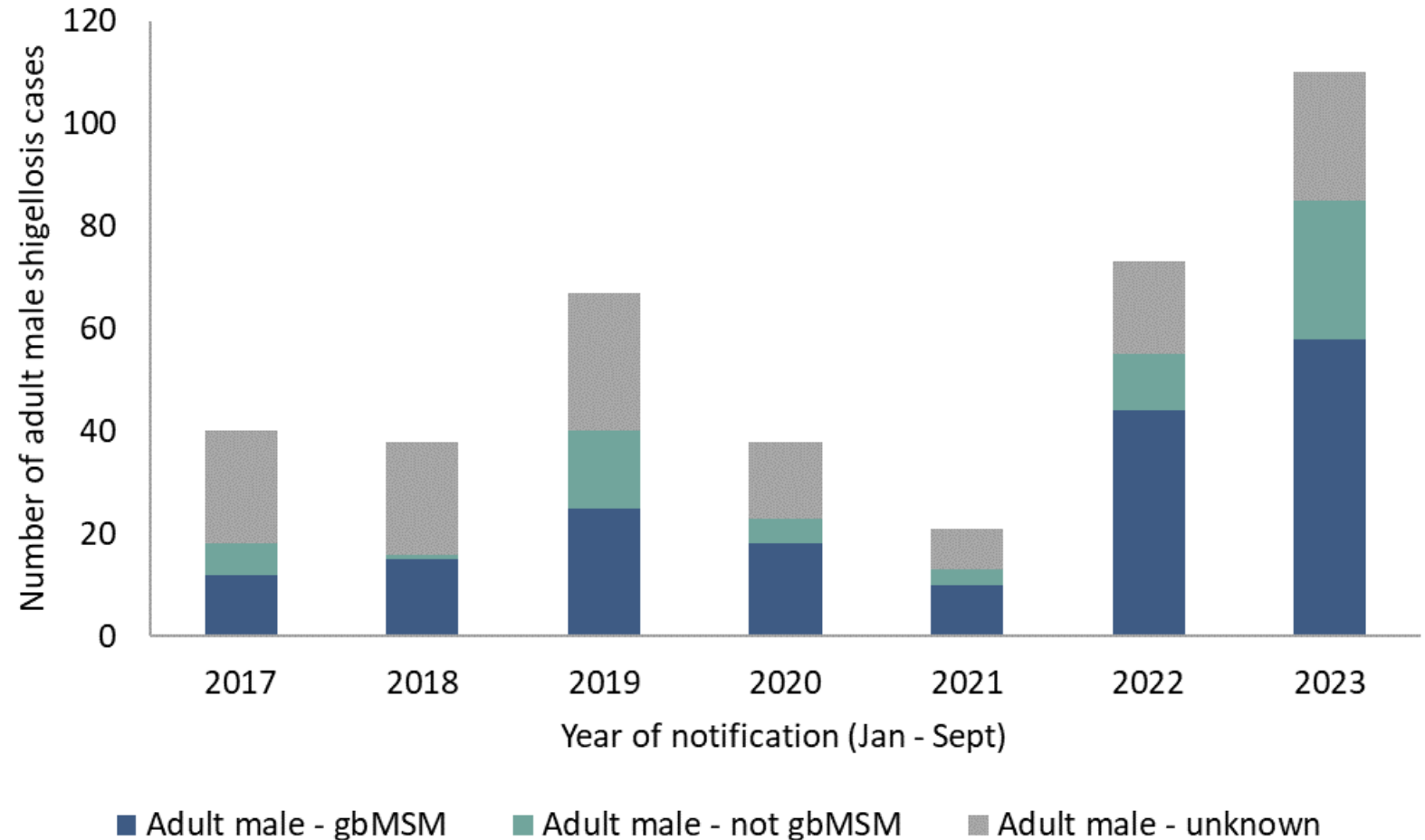
Majority of cases were among adult males



\*Jan-Sep 2023

# Adult male shigellosis cases by sexual orientation, Jan-Sept 2017-2023

- 67% (n=110) of cases notified in 2023 were adult males:
  - 58 (53%) gbMSM
  - 27 (24%) not gbMSM
  - 25 (23%) unknown
- Since 2017 the proportion of adult male cases with sexual orientation reported as gbMSM has ranged from 30-60%



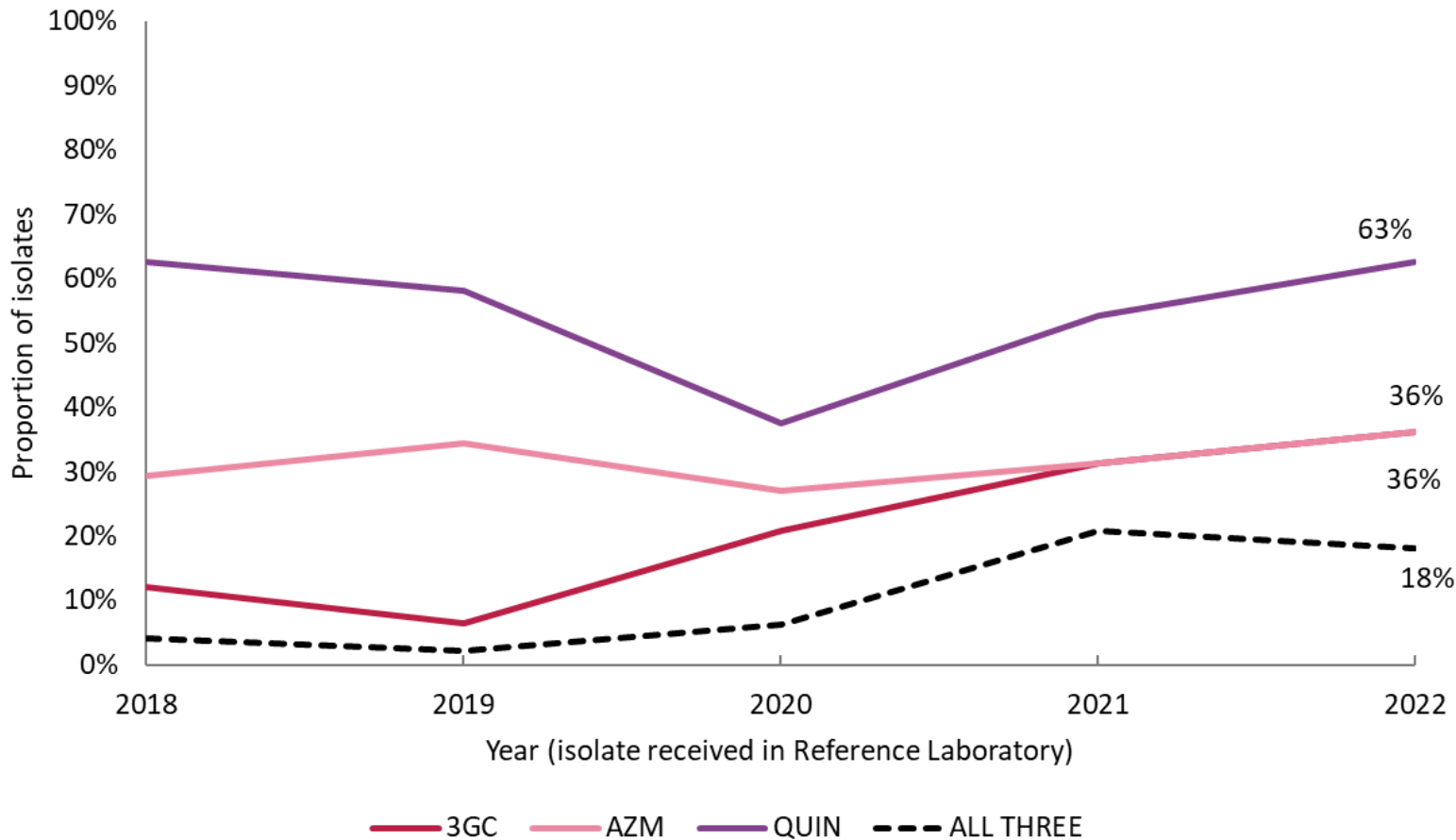
# Antimicrobial resistance



- Shigellosis is usually a self-limiting illness and people with uncomplicated disease usually recover without antimicrobial therapy. Severe illness is more likely in immunocompromised people.
- Effective antimicrobial treatment reduces the duration and severity of illness and reduces the duration of shedding
- Whole genome sequencing (WGS) for characterisation of shigella isolates is now routine in Ireland and has identified isolates and distinct microbiological clusters that are predicted to be resistant to older antimicrobial agents and agents currently recommended for empiric treatment of infection e.g. third-generation cephalosporins, fluoroquinolones, azithromycin and co-trimoxazole
- Chains of transmission of these antimicrobial resistant clusters of shigella species are mainly amongst gbMSM, in Ireland and internationally
  - Interconnected sexual networks throughout Europe and worldwide<sup>1</sup>
  - Currently 10 such clusters being monitored, examples include *S. flexneri* clusters SH19-007 and SH20-004 and *S. sonnei* clusters SH-B/17 and SH22-001

<sup>1</sup>European Centre for Disease Prevention and Control. Spread of multidrug-resistant *Shigella* in EU/EEA among gay, bisexual and other men who have sex with men – 18 July 2023. ECDC: Stockholm; 2023

# Antimicrobial resistant (AMR) shigellosis in Ireland, 2018-2022

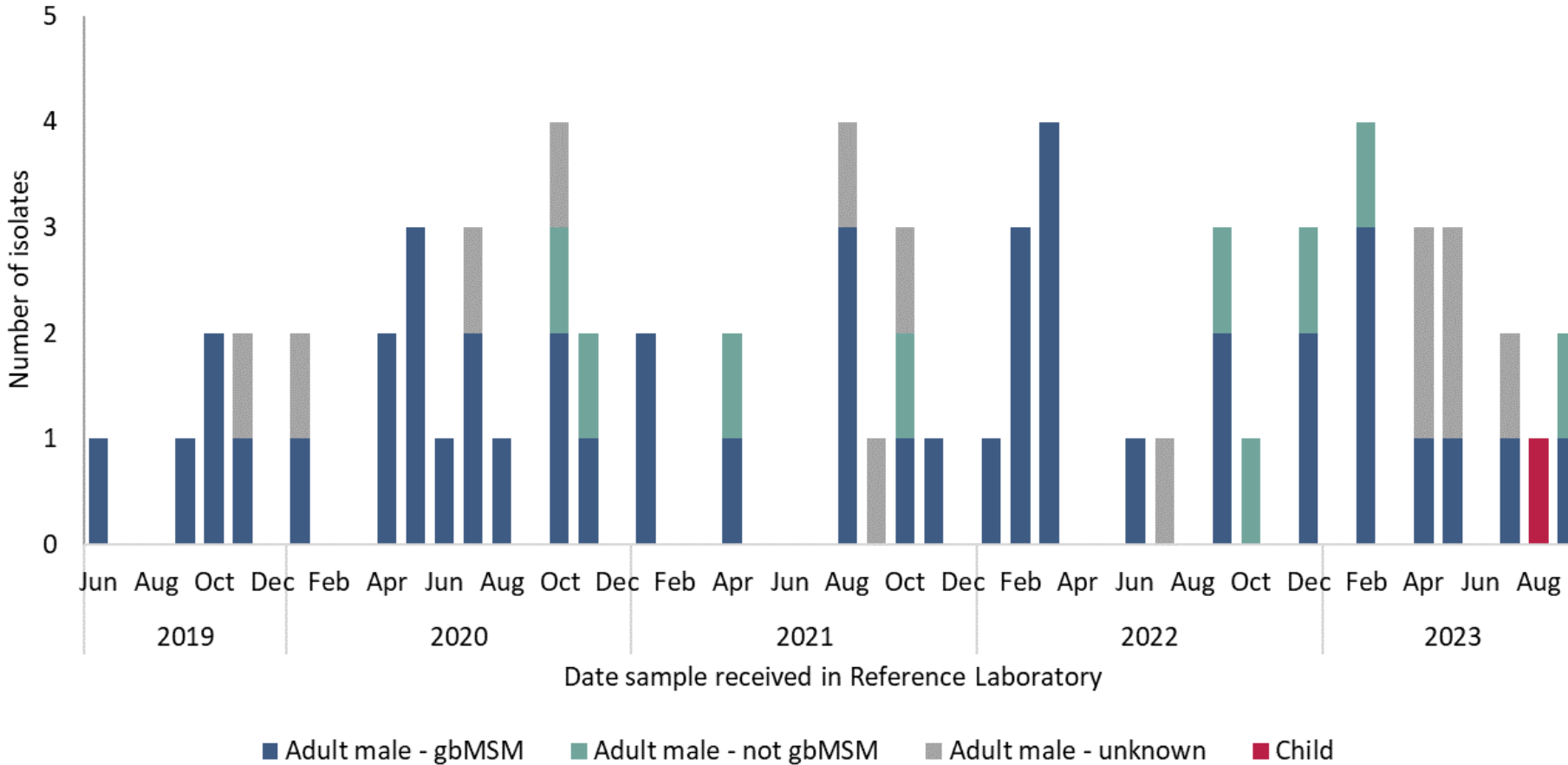


Resistance predicted based on whole genome sequencing analysis:

- Predicted 3<sup>rd</sup> generation cephalosporin resistance **increasing** (12% in 2018 to 36% in 2022)
- Proportion of isolates with resistance determinants for azithromycin **increased slightly** (29% in 2018 to 36% in 2022)
- Predicted quinolone resistance very common but **stable** (63% in both 2018 and 2022)
- Isolates displaying resistance determinants to all three classes of antimicrobials **increasing** (4% in 2018 to 18% in 2022)

3GC=predicted 3<sup>rd</sup> generation cephalosporin resistance; AZM=predicted azithromycin resistance; QUIN=predicted quinolone resistance. Resistance is predicted based on the presence of any resistance determinants to the indicated antimicrobial class.

# *S. flexneri* SH19-007 by sexual orientation 2019-2023\*



## Summary:

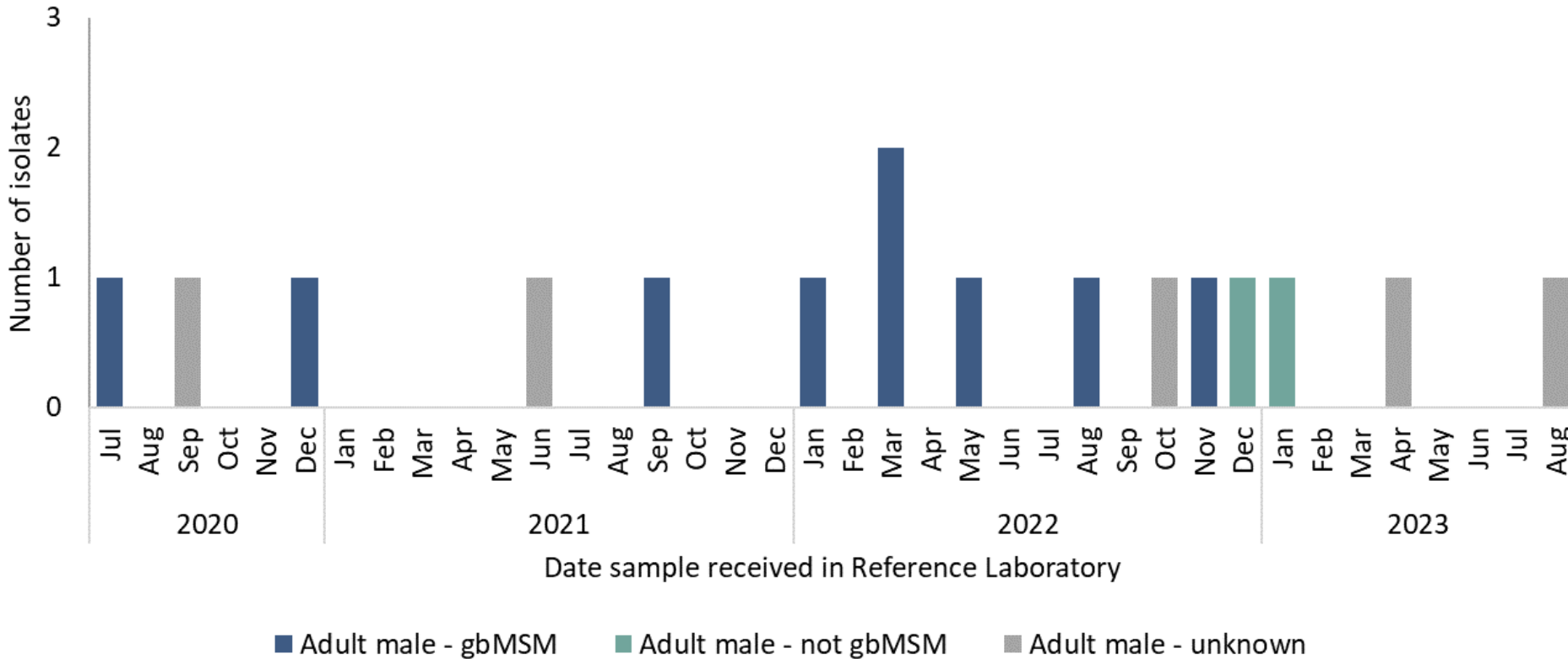
- **69 cases** - 68 adult males
  - 68% (n=46) gbMSM
- Most do not have resistance determinants to ceftriaxone, azithromycin or fluoroquinolones
- Isolates reported since 2021 had some resistance determinants for azithromycin and blaCTX-M-14 genes (ESBL)
- Cases also reported in Germany, Denmark and Belgium

\*Jan-Sep 2023

**Note:** Cluster codes are National Reference Laboratory designations

**Note:** Unknown gbMSM status may be because status was not reported on CIDR OR because it was not possible to match CIDR event and Laboratory ID

# *S. flexneri* SH20-004 by sexual orientation, 2020-2023\*



## Summary:

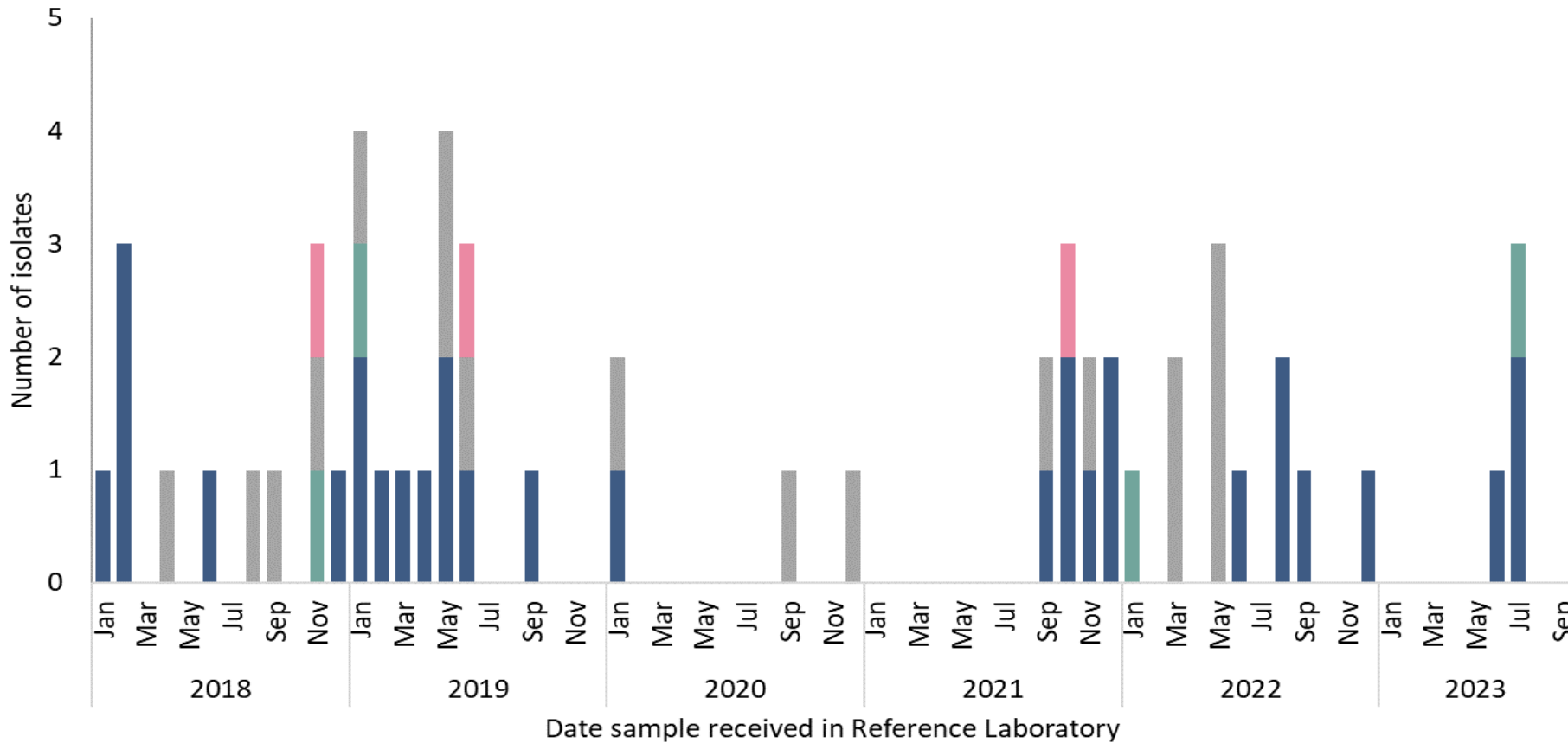
- **16 cases** - all adult males
  - 56% (n=9) gbMSM
- The majority **have resistance determinants for all 3 of ceftriaxone, azithromycin and fluoroquinolones (CAF resistance)**
- Remainder for ceftriaxone and fluoroquinolones or for fluoroquinolones alone
- Cases also reported in Germany, Denmark, Spain and Belgium

\*Jan-Sep 2023

**Note:** Cluster codes are National Reference Laboratory designations

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# *S. sonnei* SH/B-17 by sexual orientation 2018-2023\*



\*Jan-Sep 2023 ■ Adult male - gbMSM ■ Adult male - not gbMSM ■ Adult male - unknown ■ Adult female

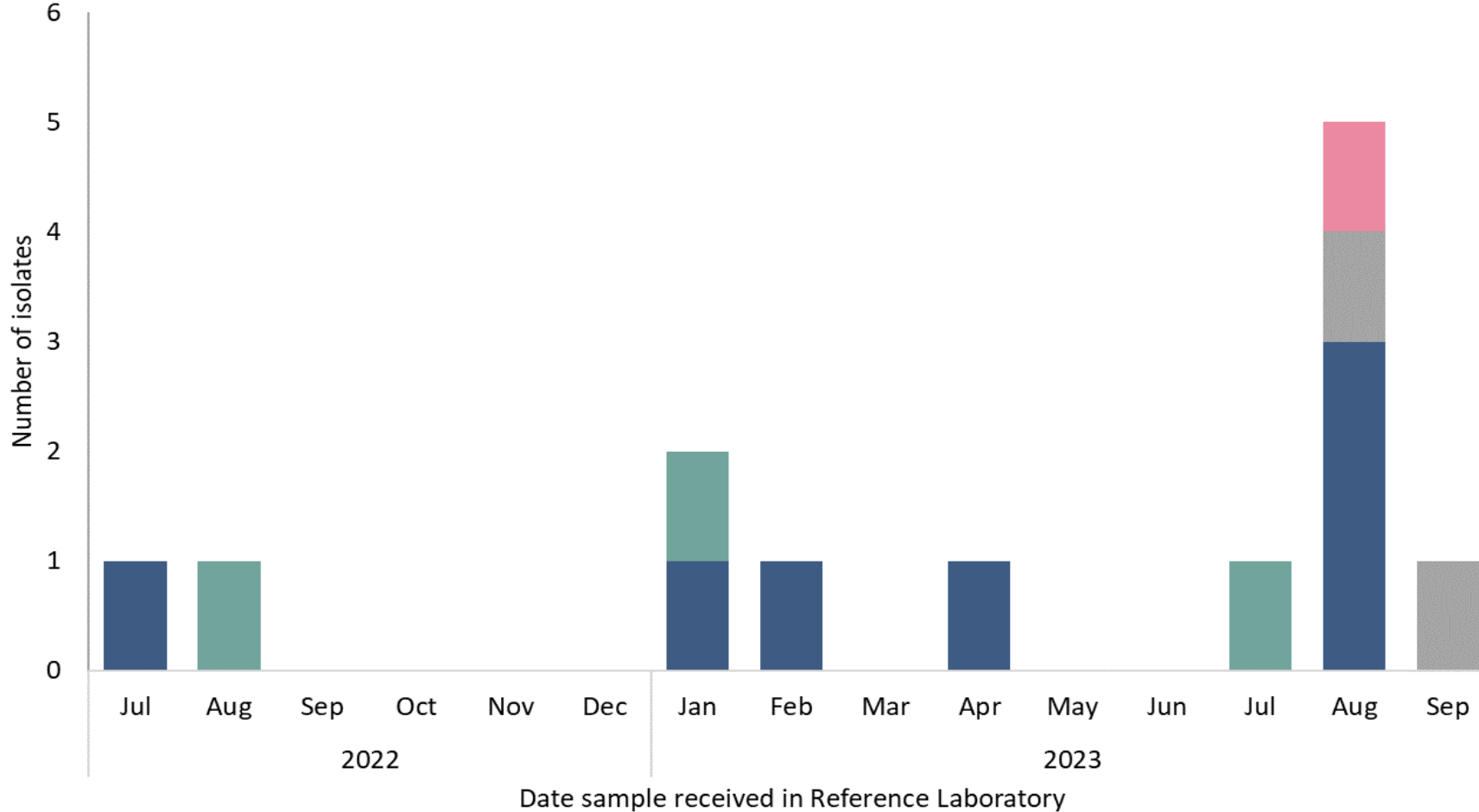
**Note:** Cluster codes are National Reference Laboratory designations

**Note:** Unknown gbMSM status may be because status was not reported on CIDR **OR** because it was not possible to match CIDR event and Laboratory ID

## Summary:

- **69 cases since 2017** – majority adult males
- Most representatives of this clonal group **have resistance determinants to azithromycin and fluoroquinolones**
- Many isolates reported since 2021 also displaying ESBL gene (blaCTX-M-27) gene
- Cases also reported in the UK, Germany Denmark, Spain, Belgium – [publication of ECDC RRA in February 2022](#)

# *S. sonnei* SH22-001 by sexual orientation, 2022-2023\*



## Summary:

- **13 cases** - 12 adult males
  - 54% (n=6) gbMSM
- **All isolates carry resistance determinants for ceftriaxone and fluoroquinolones**
- Cases also reported in Netherlands, Germany, Denmark, Spain, Belgium and the US

\*Jan-Sep 2023

■ Adult male - gbMSM   ■ Adult male - not gbMSM   ■ Adult male - unknown   ■ Adult female

**Note:** Cluster codes are National Reference Laboratory designations

**Note:** Unknown gbMSM status may be because status was not reported on CIDR **OR** because it was not possible to match CIDR event and Laboratory ID



# Response to date

- National multisectoral Incident Management Team stood up in April 2023
  - clinicians, public health, microbiologists, NGO partners, communications, clinical leads for AMR and Sexual Health, national HIV/STI and GZV disease teams
- Clinical review of treatment guidance, in light of AMR
- PH guidance for management of shigella in adult males
- Additional enhanced surveillance
- Risk communication and community engagement

## Response: Developing new treatment guidance

- Coordinated by National Clinical leads for Sexual Health, Antimicrobial Resistance and Director of National *Salmonella*, *Shigella* and *Listeria* Reference laboratory
- Available at: [www.hpsc.ie/a-z/gastroenteric/shigellosis/guidancepublications/](http://www.hpsc.ie/a-z/gastroenteric/shigellosis/guidancepublications/)  
and at: [www.hse.ie/gp/antibiotic-prescribing/conditions-and-treatments/genital/shigellosis](http://www.hse.ie/gp/antibiotic-prescribing/conditions-and-treatments/genital/shigellosis)
- **New recommendations on management of shigellosis in Ireland**
  - First line treatment for adult males hospitalised with suspected or confirmed shigellosis
    - Use carbapenem such as meropenem, pending results on susceptibility to azithromycin, ceftriaxone or fluoroquinolone
    - Also consider for all patients with suspected or confirmed shigellosis acquired outside the EU
  - Non hospitalised adult males with confirmed shigellosis
    - Treat with oral azithromycin 500mg daily for 3 days

## Response: PH management guidelines updated

- PH guidance for management of shigella in adult males updated:
  - Includes new treatment advice for cases in the community to reduce transmission
  - Additional enhanced surveillance
  - Cases to be referred to GP or Sexual Health Services
  - Criteria for microbiological clearance for shigellosis cases who are in risk groups at high risk for transmission updated to: one negative stool at least 48 hours after first normal stool or 48 hours after completing antibiotics, whichever is later
- Available here: [www.hpsc.ie/a-z/gastroenteric/shigellosis/guidancepublications/](http://www.hpsc.ie/a-z/gastroenteric/shigellosis/guidancepublications/)

# Response: Additional Enhanced Surveillance

- Part of updated PH management guidance to enhance sexual exposure surveillance
- Available at: [www.hpsc.ie/a-z/gastroenteric/shigellosis/surveillance/forms](http://www.hpsc.ie/a-z/gastroenteric/shigellosis/surveillance/forms)
- Information from enhanced surveillance is being used to guide and target interventions.

**CIDR ID:** Click or tap here to enter text.

1. Case Details			
<b>Gender Identity:</b>	Male <input type="checkbox"/> Female <input type="checkbox"/> Non-binary <input type="checkbox"/>		
HIV Status			
<b>HIV status</b>	Positive <input type="checkbox"/> Negative <input type="checkbox"/> Unknown <input type="checkbox"/>		
<i>If HIV positive:</i>		<i>If HIV negative:</i>	
<b>On ART<sup>1</sup></b>	Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>	<b>On PrEP<sup>2</sup></b>	Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>
2. Clinical Care			
<b>Patient admitted to ICU:</b>	Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>		
3. Potential Exposures			
Sexual History			
<b>In the 7 days prior to symptom onset, did case have any sexual/intimate skin-to-skin contact</b>			Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>
<i>If yes, please complete the remaining questions in this section. If no, please move to section 4.</i>			
<b>Number of sexual contacts of case in the 7 days before onset:</b>			Click or tap here to enter text.
<b>Sex of recent contact(s) in 7 days before onset:</b>		Male <input type="checkbox"/> Female <input type="checkbox"/> Both <input type="checkbox"/> Unknown <input type="checkbox"/>	
<b>Where did the case meet sexual contacts? (Tick all applicable and enter any available details in the free text box)</b>			
Backroom <input type="checkbox"/>	Sex Party <input type="checkbox"/>	Sauna <input type="checkbox"/>	
Bar/Club <input type="checkbox"/>	Cruising open air <input type="checkbox"/>	Internet <input type="checkbox"/>	
Apps/Social networks <input type="checkbox"/>		<i>Please specify sites</i> Click or tap here to enter text.	
Other <input type="checkbox"/>		<i>Please specify</i> Click or tap here to enter text.	
Where did sex take place?			
Own place <input type="checkbox"/>	His Place <input type="checkbox"/>	Cruising <input type="checkbox"/>	Open air <input type="checkbox"/>
Sex party <input type="checkbox"/>	Sauna <input type="checkbox"/>	Toilets <input type="checkbox"/>	Other <input type="checkbox"/> <i>Please specify</i> Click or tap here to enter text.
<b>Date of last sexual contact:</b>		Click or tap to enter a date.	
<b>Country of contact:</b>		Click or tap here to enter text.	
Types of sexual contact in the 7 days before onset – more than one option allowed			
Chemsex <sup>3</sup>	Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>		
Slamming <sup>4</sup>	Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>		
Sex with more than one partner	Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>		
Sex toys	Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>		
4. Previous shigellosis			
<b>Has this case previously been diagnosed with shigellosis?</b>		Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>	
<b>Date of previous shigellosis diagnosis</b>		Click or tap to enter a date.	
<b>Additional comment on previous shigellosis diagnosis</b>		Click or tap here to enter text.	

# Response: Risk Communication and community engagement

- gbMSM community partners on IMT
- Partnership working with Health Service communications team and Public Health.
- Funding provided to raise awareness of shigellosis symptoms, personal protective measures and how to seek help if symptomatic using:
  - Targeted communications on multiple social media platforms
  - Outreach in venues and at PRIDE
  - Articles in Gay Community News
- Phase 2 of the campaign focussing on shigellosis among gbMSM travelling to attend mass gatherings, mega-events or circuit parties abroad



## Know about Shigella?

Shigella is a bacterial gut infection that can cause severe stomach upset.

Anyone can get Shigella, but certain sexual activities that involve contact with faeces (poo) increase the chances of getting infected. These can include anal sex, rimming, or anal play.

HE GAY HEALTH NETWORK Man2Man.ie

To find out more about Shigella and how to protect yourself visit [man2man.ie/shigella](http://man2man.ie/shigella)



## Travelling Abroad? Learn more about Shigella

### What is Shigella?

Shigella is a gut infection that causes stomach upset and diarrhoea. Risk factors include sexual activities that may involve poo.

### Protecting yourself at large parties or festivals

- Get medical advice if you think you have Shigella.
- Change condoms between activities and partners.
- Wash your hands regularly.
- Clean sex toys before sharing.

Follow @man2manireland for updates and resources

HE GAY HEALTH NETWORK Man2Man.ie

For more information visit: [man2man.ie/shigella](http://man2man.ie/shigella)



# Conclusions

- ***Complex, no easy solutions***
  - Long lasting and evolving clusters – chains of transmission missed, international dimension
  - Reference laboratory work key to identification of the problem
- ***Collaboration, involvement of NGO partners is vital***
  - partnership working, trust, sustaining funding, including outreach
- ***Surveillance involving 2 teams (GZV and STIs)***
  - Usually focusing on different factors associated with infection – food/water versus sexual behaviours; approaches and experiences are different
  - Figuring out how to work together effectively with STEI
- ***Sexually Transmitted Enteric Infection is an emerging issue***
  - Likely to be under ascertainment



# Technical Notes



These slides may be copied and reproduced, provided HPSC is acknowledged. Suggested citation: HSE-Health Protection Surveillance Centre. Recent increase in drug resistant shigella among gay, bisexual and other men who have sex with men (gbMSM) in Ireland: Outbreak Response. Dublin: HPSC; 2023.

Data were extracted from CIDR on 20/10/2023 and were correct at the time of publication.

Data are provisional and subject to ongoing review, validation and update. As a result, figures in this report may differ from previously published figures or figures reported in the future.

As this is an ongoing outbreak, data presented on cases and clusters will be subject to further updates.