INVESTIGATION AND RESPONSE TO AN OUTBREAK OF UROGENITAL AND ANORECTAL INFECTIONS OF *NEISSERIA MENINGITIDIS* SEROGROUP Y ST-1466, AUSTRALIA'

Authors:
Lahra MM[1, 2], Latham NH[3,4], Templeton DJ[5], Read P[6], Carmody C[7], Ryder N[8], Ellis SE[3], Madden EF[3], Parasuraman A[3], Wells J[3], Sheppeard V[6], Armstrong BH[9], Holland J[10], Pendle S[11], Sherry N[12], Leong L[13], Papanicolas L[13], Selvey CE[3], Van Hal SJ[14,15]

[1]World Health Organization Collaborating Centre for STI and AMR, New South Wales Health Pathology Microbiology, The Prince of Wales Hospital, Randwick, New South Wales, Australia, [2]Faculty of Medicine, The University of New South Wales, Sydney, New South Wales, Australia, [3]Health Protection NSW, St Leonards, NSW, Australia, [4]NSW Public Health Training Program, NSW Ministry of Health, St Leonards, NSW, Australia, [5]Sexual Health Medicine, Royal Prince Alfred Hospital, Camperdown, NSW, Australia, [6]South Eastern Sydney Local Health District, Randwick, NSW Australia, [7]South Western Sydney Local Health District, Liverpool, NSW, Australia, [8]Centre for Population Health NSW Health, St Leonards, NSW, Australia, [9]Douglass Hanly Moir Pathology, NSW Australia, [10]Laverty Pathology, NSW Australia, [11]Australian Clinical Laboratories, NSW Australia, [12]Microbiological Diagnostic Unit Public Health Laboratory The Peter Doherty Institute for Infection and Immunity, [13]South Australian Pathology, SA, Australia, [14]NSW Health Pathology, Royal Prince Alfred Hospital, Sydney, NSW, Australia, [15]Central Clinical School, University of Sydney, Sydney, NSW, Australia

Background:
Amongst the clinical presentations of *Neisseria meningitidis*, anogenital infections clinically indistinguishable from gonorrhoea are uncommonly reported, but equally it is difficult to estimate their incidence due to heterogeneous testing and reporting practices. In 2023 an increased number of anogenital infections with *N. meningitidis* serogroup Y (MenY) were reported in NSW, Australia. Two additional Australian states (Victoria n=7 and South Australia n=2) identified urogenital MenY ST-1466 infections in late 2023.

Methods:
The *N. meningitidis* isolates from anogenital infections were detected or referred to jurisdictional Neisseria Reference Laboratories and whole genome sequencing (WGS) was performed. *Fastq* files were shared to enable a centralised analysis. In NSW, most cases were treated presumptively on presentation for gonococcal infection. Sexual contacts in the seven days preceding case symptom onset were advised to monitor for symptoms of invasive meningococcal disease (IMD) and were offered clearance antibiotics and vaccination with ACWY conjugate vaccine.

Results:
WGS found a common MenY sequence type (ST-1466), with limited diversity and showed all MenY ST-1466 sequences were interspersed, suggestive of an Australia-wide outbreak. Isolates causing IMD in Australia are typed as part of surveillance, and there has been no MenY ST-1466 IMD recorded in Australia to date. Of the 41 cases from NSW most were men (N=27), of whom six reported recent contact with a female

sex worker. Five cases were men who have sex with men and two were female sex workers.

Conclusion:
Although sporadic cases of MenY urethritis have been previously reported, this is the first documented geo-temporal cluster of MenY anogenital disease. Cases continue to be identified and concerns remain regarding the risk of IMD, given the similarity of these sequences with a MenY ST-1466 IMD strain causing a concurrent outbreak in the USA.

Disclosure of Interest Statement:
No pharmaceutical grants were received in the development of this study.