



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service



Weekly Surveillance Report

Week 43, 2016

National Institute for Communicable Diseases -- Weekly Surveillance Report --



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This report reflects only laboratory-confirmed invasive disease,
and only as reported to the National Institute for Communicable Diseases to date.
Delayed reporting is an inherent limitation of laboratory-based surveillance.

Laboratory-Based Respiratory & Meningeal Disease Surveillance

Reporting period 01/01/2016 to 01/11/2016

Results until end of epidemiologic week 43 (2016)

Programme Description:

The Centre for Respiratory Diseases and Meningitis (CRDM) at the National Institute for Communicable Diseases (NICD) of the National Health Laboratory Service (NHLS) monitors invasive disease caused by *Neisseria meningitidis*, *Haemophilus influenzae*, and *Streptococcus pneumoniae* through a national, active, laboratory-based surveillance system (as part of GERMS-SA). All microbiology diagnostic laboratories throughout South Africa are requested to report laboratory-confirmed disease (defined as the isolation of *Neisseria meningitidis*, *Haemophilus influenzae*, or *Streptococcus pneumoniae* from normally sterile site specimens e.g. CSF or blood, or for culture-negative cases, any two of the following: a positive antigen latex agglutination test, a consistent Gram stain, and/or positive polymerase chain reaction [PCR]). Reporting laboratories should include all private- and public-sector health care laboratories, and other specialist laboratories e.g. laboratories serving mining or military hospitals. Available isolates are sent to CRDM for confirmation and further characterisation, including serogrouping. Increasingly more culture-negative specimens are being sent for PCR testing.

Some of the limitations of this surveillance system are that we include only individuals that arrive at hospitals and have specimens taken, and cases are only counted if laboratories report them to us. Quarterly audits to verify completeness of reporting are conducted for all public-sector laboratories. Frequent communications and visits are conducted to improve case reporting. Isolates for serogrouping are not available for cases identified by audit.

Comments:

By week 43 in 2016, 111 meningococcal cases had been reported to the NICD. Serogrouping results to date include 31 B, 12 C, 21 W and 12 Y. For the same period last year, a total of 133 cases had been reported.

Two hundred and fifty (250) cases of *H. influenzae* have been reported to date in 2016. Serotyping results to date include 10 a, 35 b, 2 c, 1 d, 5 e, 7 f and 66 non-typeable. For the same period last year, a total of 287 cases had been reported.

To date this year, 1988 pneumococcal cases have been reported, compared to 2219 cases reported for the same period last year. Most cases occurred in children aged <5 years and adults aged 30-44 years.

Reductions of cases reported in 2016 may reflect the inherent delays of laboratory-based reporting, but may also reflect ongoing operational changes.

Table 1. Number of *Neisseria meningitidis* cases by week in South Africa, 2015 and 2016

Week	Year	
	2015	2016
1	2	2
2	0	0
3	2	3
4	1	1
5	2	2
6	2	1
7	3	1
8	2	2
9	0	2
10	0	2
11	4	1
12	1	1
13	3	0
14	2	2
15	0	4
16	4	0
17	3	3
18	3	1
19	2	1
20	1	1
21	3	5
22	1	3
23	2	3
24	7	5
25	4	5
26	8	4
27	2	3
28	5	3
29	3	8
30	6	5
31	0	2
32	7	3
33	7	5
34	5	1
35	5	4
36	4	4
37	3	3
38	6	4
39	4	6
40	4	2
41	1	2
42	4	0
43	5	1
44		
45		
46		
47		
48		
49		
50		
51		
52		
	133	111

Table 2. Number of *Neisseria meningitidis* cases by province in South Africa, 2015 and 2016

Province*	Year	
	2015	2016
EC	25	13
FS	8	2
GA	38	29
KZ	19	9
LP	1	1
MP	3	5
NC	2	1
NW	3	5
WC	34	46
Total	133	111

Table 3. Number of *Neisseria meningitidis* cases by serogroup in South Africa, 2015 and 2016

Serogroup	Year	
	2015	2016
A	22	0
B	42	31
C	8	12
W	36	21
X	1	0
Y	23	12
Neg ABCWXY	0	2
Non-groupable	1	1
No serogroup#	0	32
Total	133	111

Table 4. Number of *Neisseria meningitidis* cases by age group in South Africa, 2015 and 2016

Age group (years)	Year	
	2015	2016
0-9	59	46
10-19	20	22
20-29	21	21
30-39	19	6
40-49	4	2
50-59	4	3
60-69	2	1
70-79	0	1
>79	0	0
Unknown	4	9
Total	133	111

Table 5. Number of *Neisseria meningitidis* cases in children <10 years by age in South Africa, 2015 and 2016

Age (years)	Year	
	2015	2016
<1	19	16
1	9	8
2	9	3
3	6	1
4	1	5
5	5	3
6	1	4
7	1	2
8	2	1
9	6	3
Total	59	46

*EC: Eastern Cape; FS: Free State; GA: Gauteng; KZ: KwaZulu-Natal; LP: Limpopo; MP: Mpumalanga; NC: Northern Cape; NW: North West; WC: Western Cape

#No serogroup: Cases with serogrouping results not yet available.

Figure 1: Number of *Neisseria meningitidis* cases by week in South Africa, 2015 and 2016 (until end week 43)

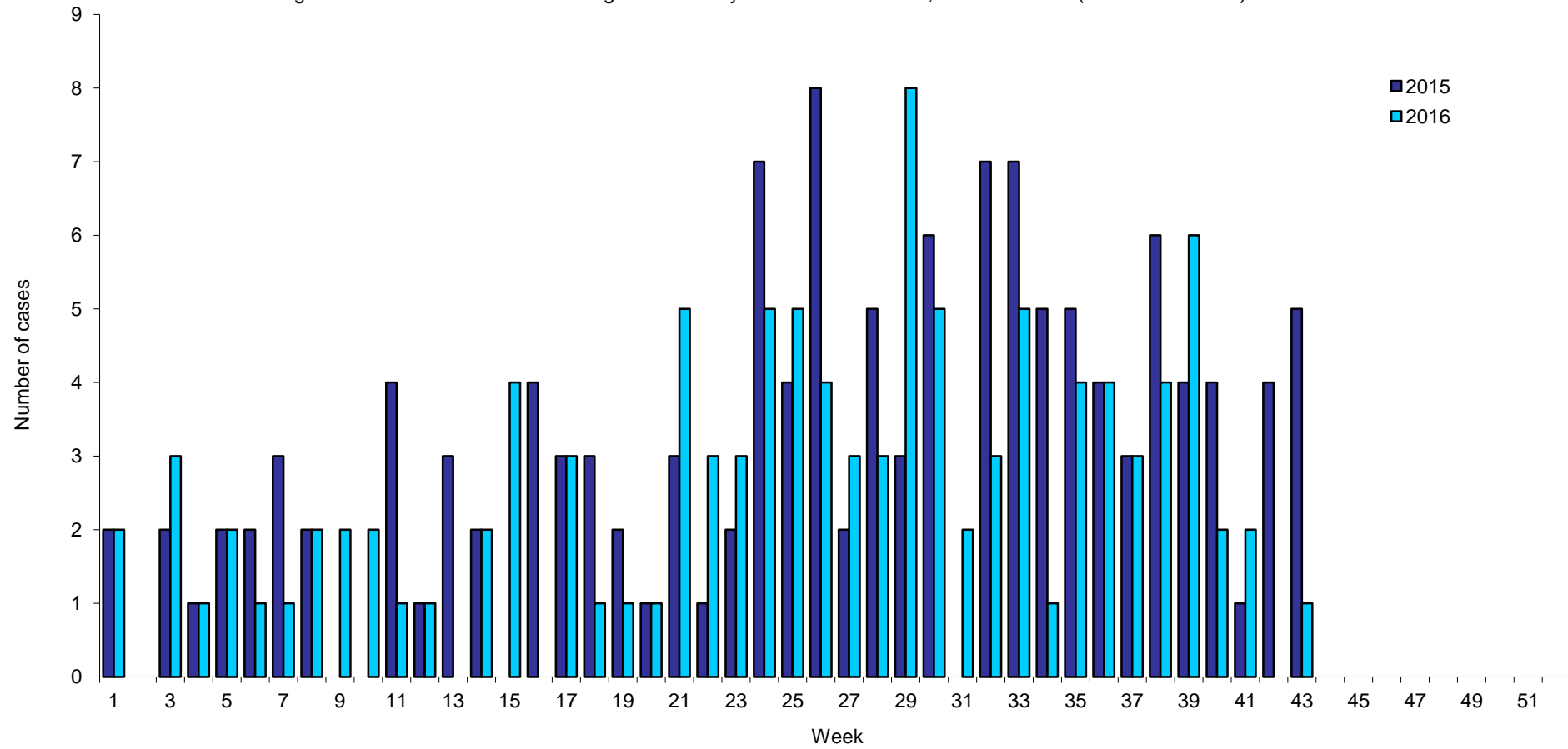


Figure 2: Number of *Neisseria meningitidis* cases by province* in South Africa, 2015 and 2016 (until end week 43)

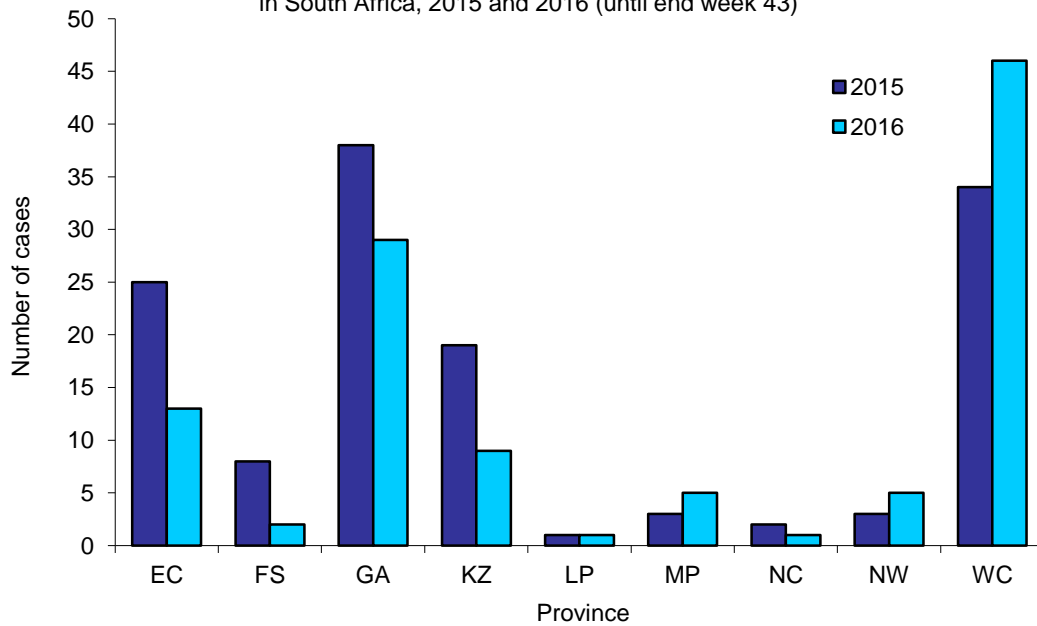
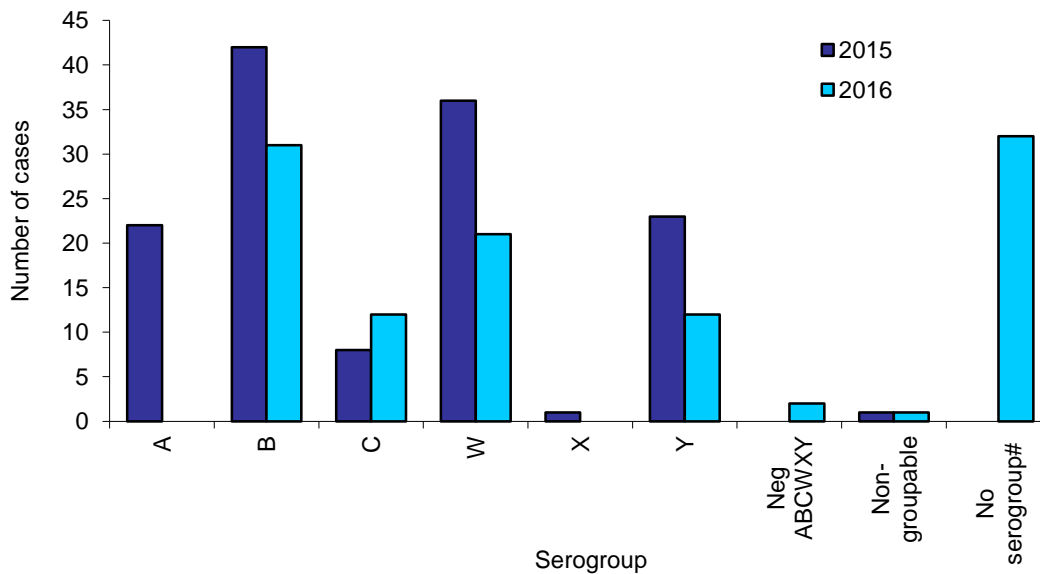


Figure 3: Number of *Neisseria meningitidis* cases by serogroup in South Africa, 2015 and 2016 (until end week 43)



#No serogroup: Cases with serogrouping results not yet available, no isolate, or identified on audit.

Figure 4: Number of *Neisseria meningitidis* cases by age group in South Africa, 2015 and 2016 (until end week 43)

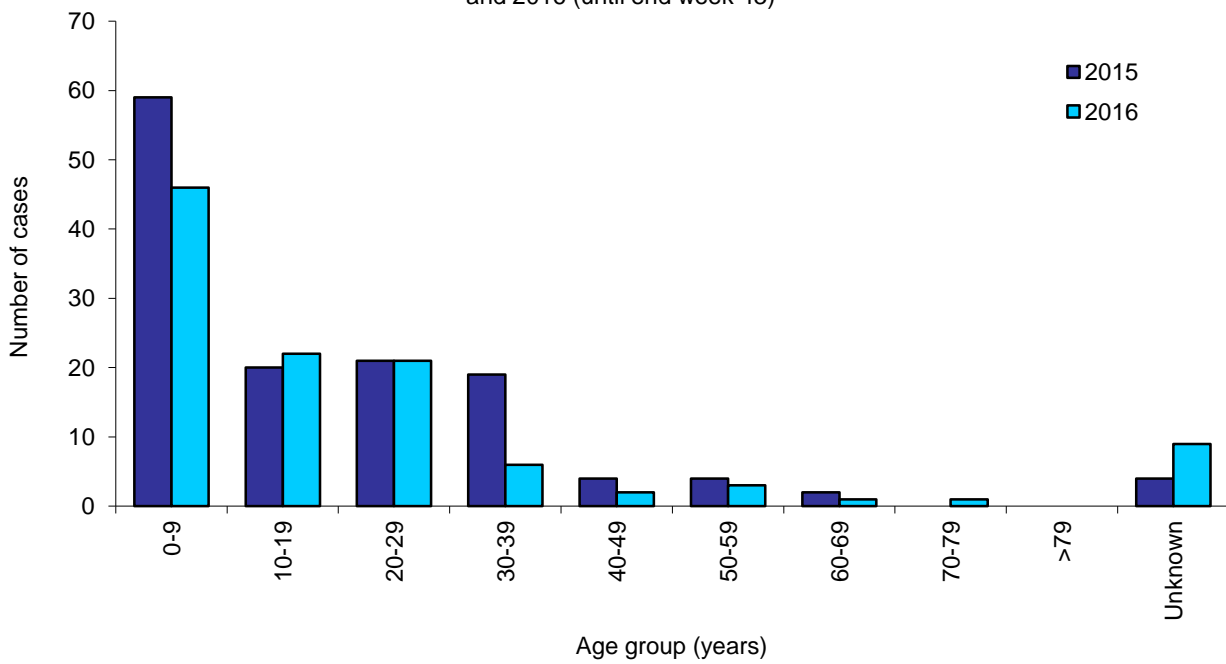


Figure 5: Number of *Neisseria meningitidis* cases in children <10 years, by age in years, in South Africa, 2015 and 2016 (until end week 43)

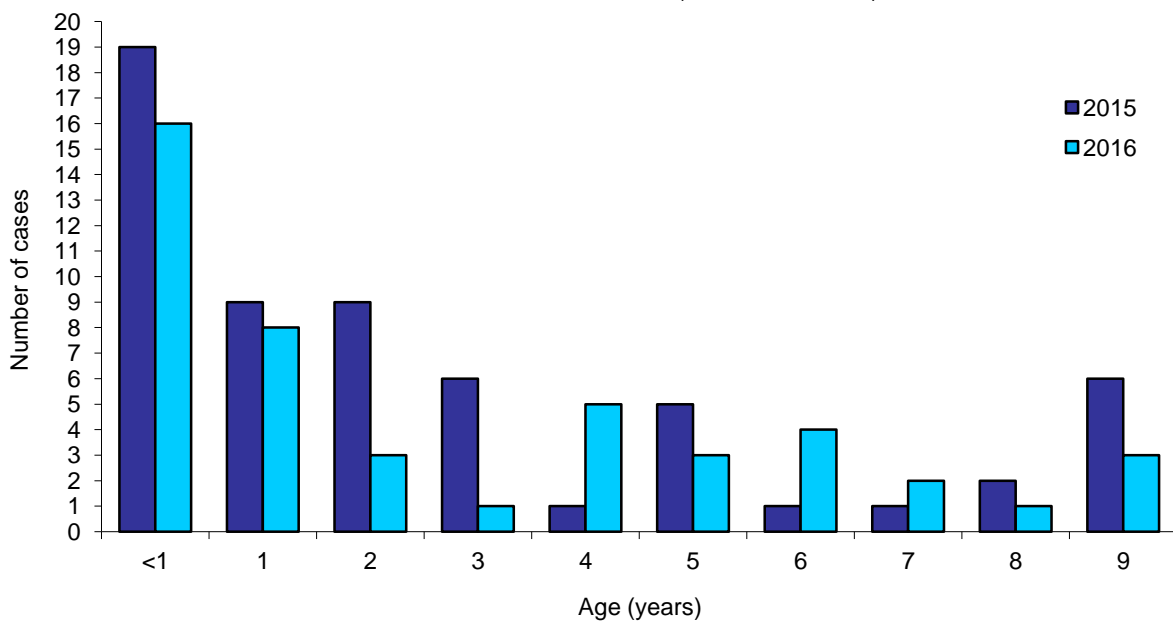


Table 6. Number of *Haemophilus influenzae* cases by month in South Africa, 2015 and 2016

Month	Year	
	2015	2016
Jan	20	12
Feb	23	17
Mar	27	22
Apr	24	26
May	26	22
Jun	39	39
Jul	34	39
Aug	28	33
Sep	30	26
Oct	36	14
Nov		
Dec		
Total	287	250

Table 7. Number of *Haemophilus influenzae* cases by province in South Africa, 2015 and 2016

Province*	Year	
	2015	2016
EC	22	18
FS	9	11
GA	99	88
KZ	33	31
LP	5	6
MP	9	8
NC	1	5
NW	3	5
WC	106	78
Total	287	250

Table 8. Number of *Haemophilus influenzae* cases by serotype in South Africa, 2015 and 2016

Serotype	Year	
	2015	2016
a	11	10
b	31	35
c	2	2
d	1	1
e	2	5
f	11	7
NT	121	66
No serotype#	108	124
Total	287	250

Table 9. Number of *Haemophilus influenzae* cases by age group in South Africa, 2015 and 2016

Age group (Years)	Year	
	2015	2016
0-9	118	110
10-19	18	12
20-29	25	22
30-39	27	25
40-49	34	24
50-59	24	19
60-69	17	16
70-79	7	5
>79	5	1
Unknown	12	16
Total	287	250

Table 10. Number of *Haemophilus influenzae* cases in children <10 years by age in South Africa, 2015 and 2016

Age (years)	Year	
	2015	2016
<1	67	62
1	26	20
2	6	8
3	4	5
4	2	0
5	5	5
6	4	4
7	0	3
8	0	3
9	4	0
Total	118	110

#No serotype: Cases with serotyping results not yet available, no isolate, or identified on audit.

Figure 6: Number of *Haemophilus influenzae* cases by month in South Africa, 2015 and 2016 (until end week 43)

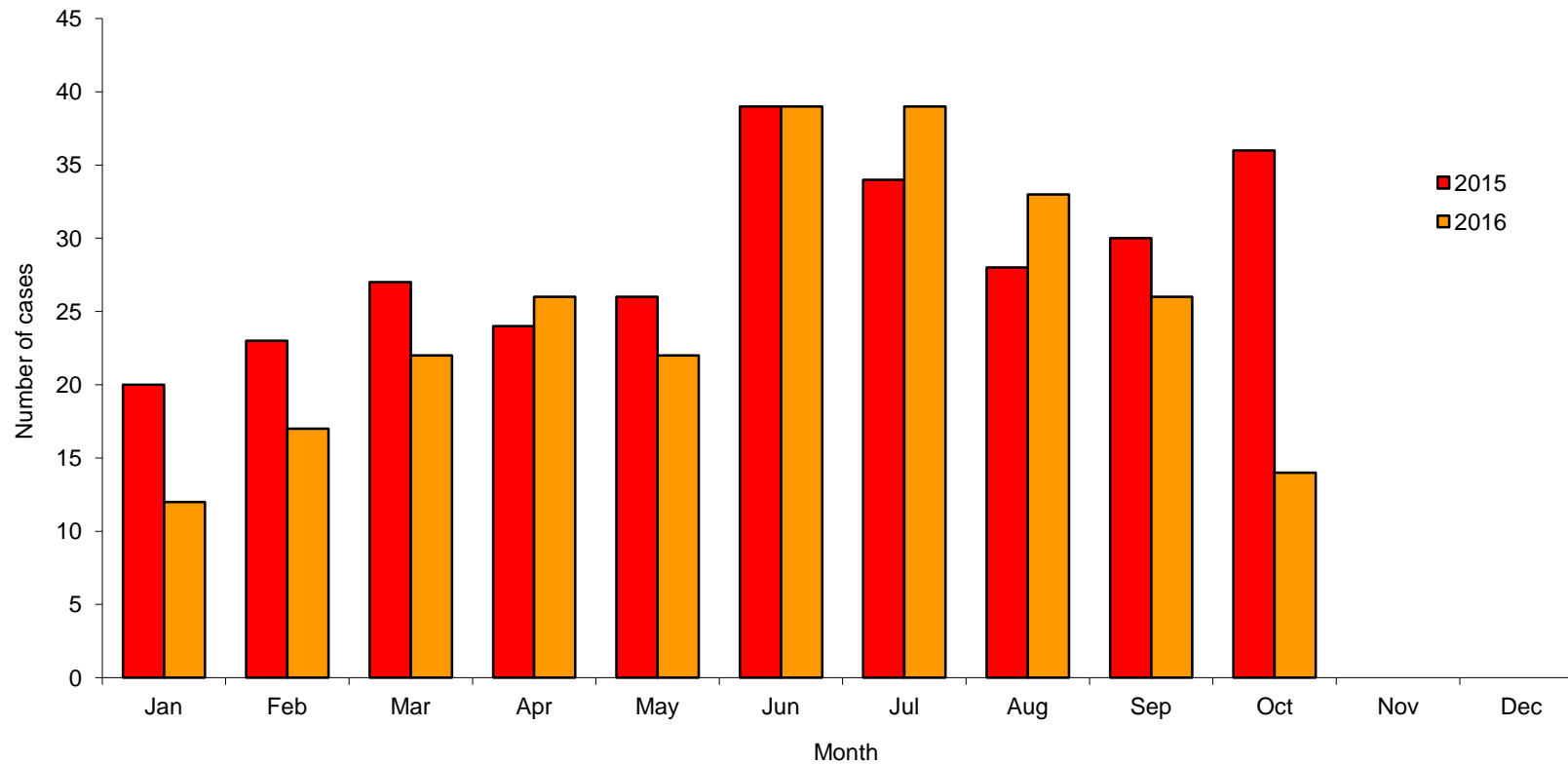


Figure 7: Number of *Haemophilus influenzae* cases by province* in South Africa, 2015 and 2016 (until end week 43)

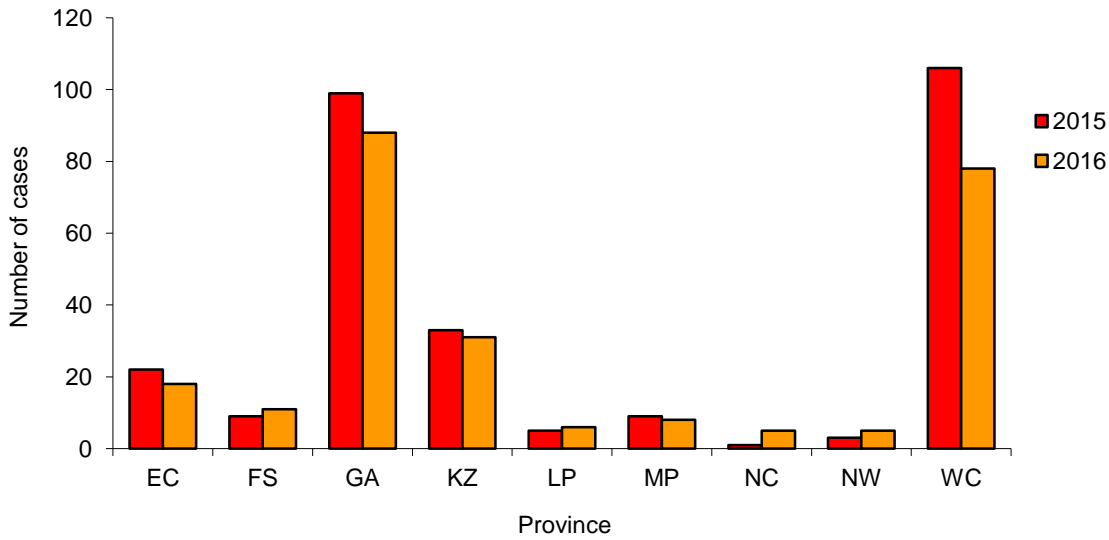
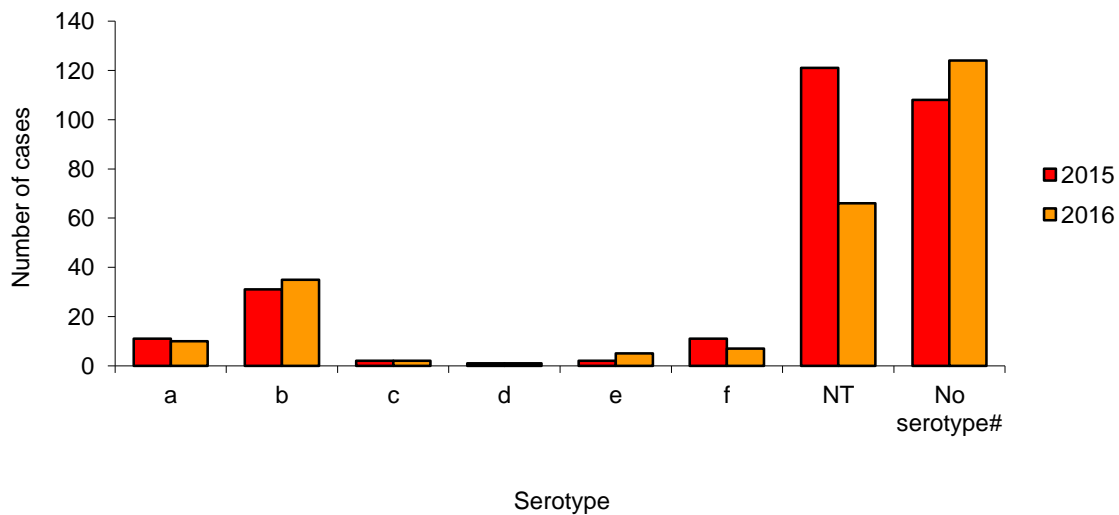


Figure 8: Number of *Haemophilus influenzae* cases by serogroup in South Africa, 2015 and 2016 (until end week 43)



#No serotype: Cases with serotyping results not yet available, no isolate, or identified on audit.

Figure 9: Number of *Haemophilus influenzae* cases by age group in South Africa, 2015 and 2016 (until end week 43)

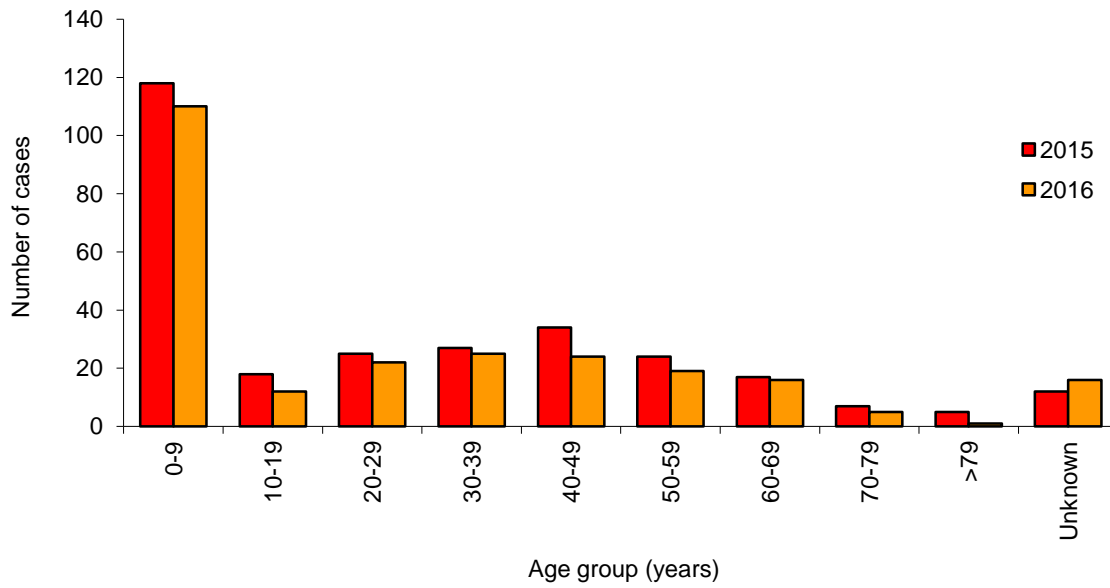


Figure 10: Number of *Haemophilus influenzae* cases in children <10 years, by age in years, in South Africa, 2015 and 2016 (until end week 43)

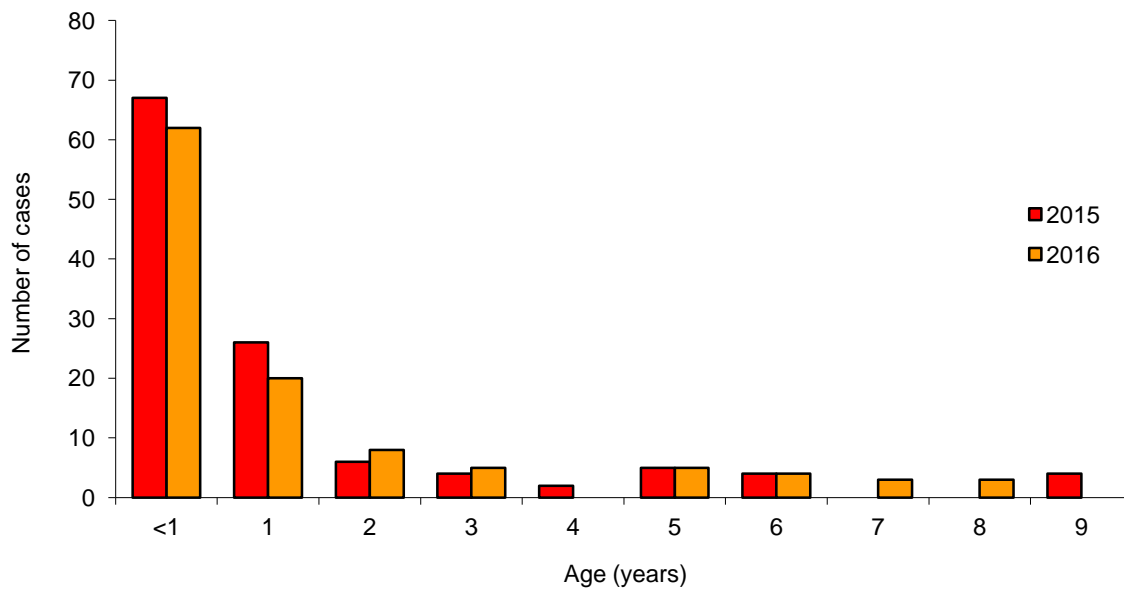


Table 11. Number of *Streptococcus pneumoniae* cases by week in South Africa, 2015 and 2016

Week	Year	
	2015	2016
52	0	12
1	17	38
2	34	38
3	21	16
4	38	25
5	32	28
6	30	32
7	35	29
8	40	36
9	38	41
10	41	48
11	46	42
12	47	33
13	52	26
14	43	27
15	48	35
16	32	42
17	44	42
18	32	51
19	67	51
20	75	62
21	48	42
22	75	59
23	57	60
24	64	58
25	51	63
26	78	53
27	61	61
28	69	56
29	63	51
30	66	56
31	55	47
32	49	55
33	80	66
34	59	57
35	65	64
36	63	58
37	66	56
38	67	53
39	62	39
40	54	48
41	47	57
42	65	45
43	43	30
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
	2219	1988

Table 12. Number of *Streptococcus pneumoniae* cases by province* in South Africa, 2015 and 2016

Province	Year	
	2015	2016
EC	191	173
FS	121	125
GA	804	673
KZ	302	257
LP	93	74
MP	73	84
NC	23	39
NW	100	66
WC	512	497
Total	2219	1988

Table 13. Number of *Streptococcus pneumoniae* cases by PCV13 serotype in children<5 in South Africa, 2015 and 2016

Serogroup	Year	
	2015	2016
1	2	0
3	5	6
4	2	1
5	1	0
6A	2	2
6B	2	2
7F	1	1
9V	1	0
14	0	3
18C	2	1
19A	9	9
19F	9	11
23F	6	2
Total	42	38

Table 14. Number of *Streptococcus pneumoniae* cases by age group in South Africa, 2015 and 2016

Age group (Years)	Year	
	2015	2016
0-4	330	313
5-9	59	58
10-14	54	59
15-19	49	43
20-24	72	84
25-29	166	130
30-34	246	221
35-39	262	218
40-44	232	215
45-49	164	164
50-54	131	125
55-59	105	100
60-64	76	58
>64	161	141
Unknown	112	59
Total	2219	1988

Table 15. Number and proportion of *Streptococcus pneumoniae* cases by penicillin susceptibility in South Africa, 2015 and 2016

Penicillin susceptibility	Year			
	2015 (n)	2015 (%)	2016(n)	2016 (%)
Susceptible	1063	48	875	44
Intermediate	330	15	259	13
Resistant	64	3	59	3
Unknown	762	34	795	
Total	2219	100	1988	100

*EC: Eastern Cape; FS: Free State; GA: Gauteng; KZ: KwaZulu
-Natal; LP: Limpopo; MP: Mpumalanga; NC: Northern Cape;
NW: North West; WC: Western Cape

Figure 11: Number of *Streptococcus pneumoniae* cases by week in South Africa, 2015 and 2016 (until end week 43)

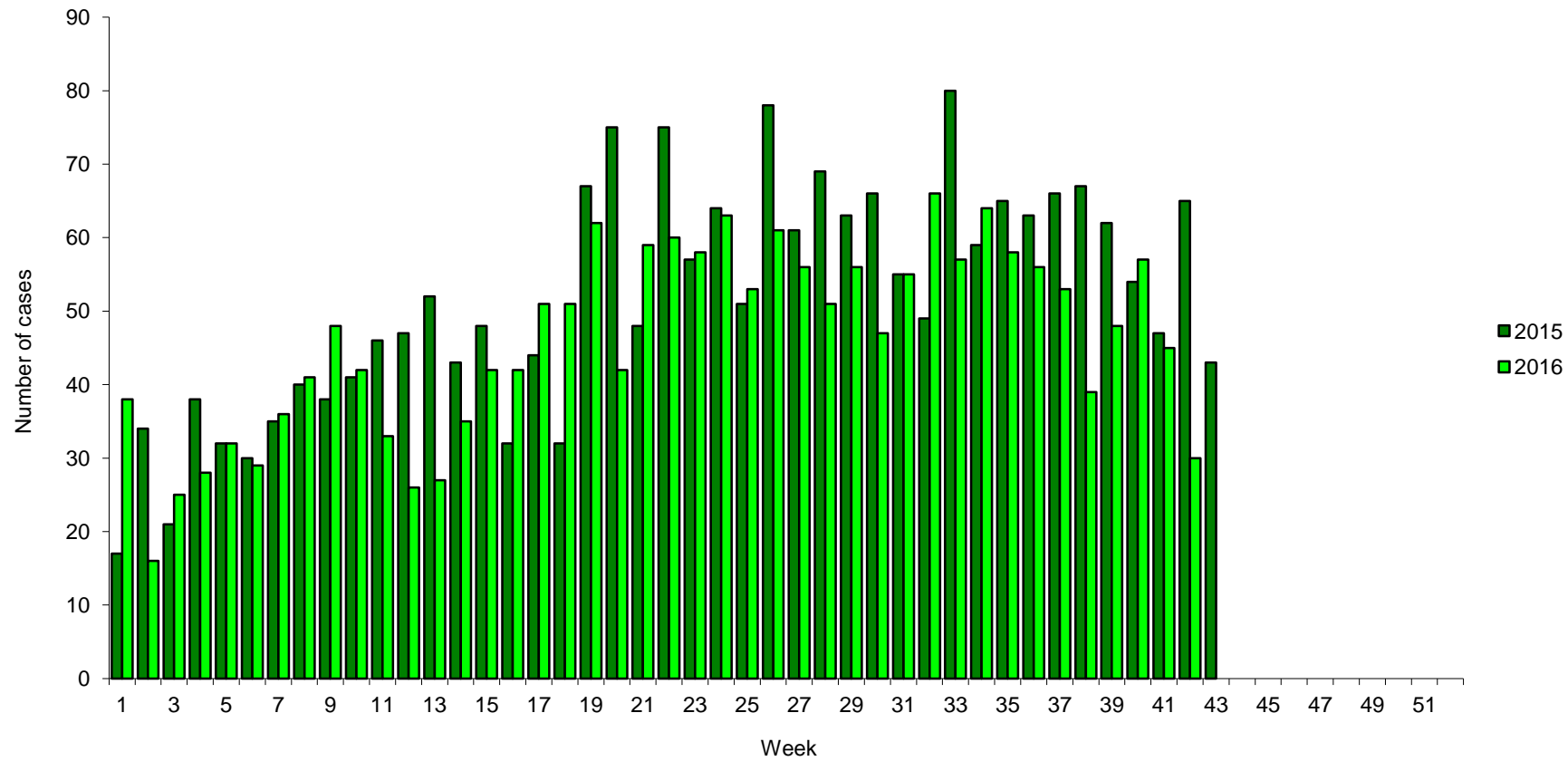


Figure 12: Number of *Streptococcus pneumoniae* cases by province* in South Africa, 2015 and 2016 (until end week 43)

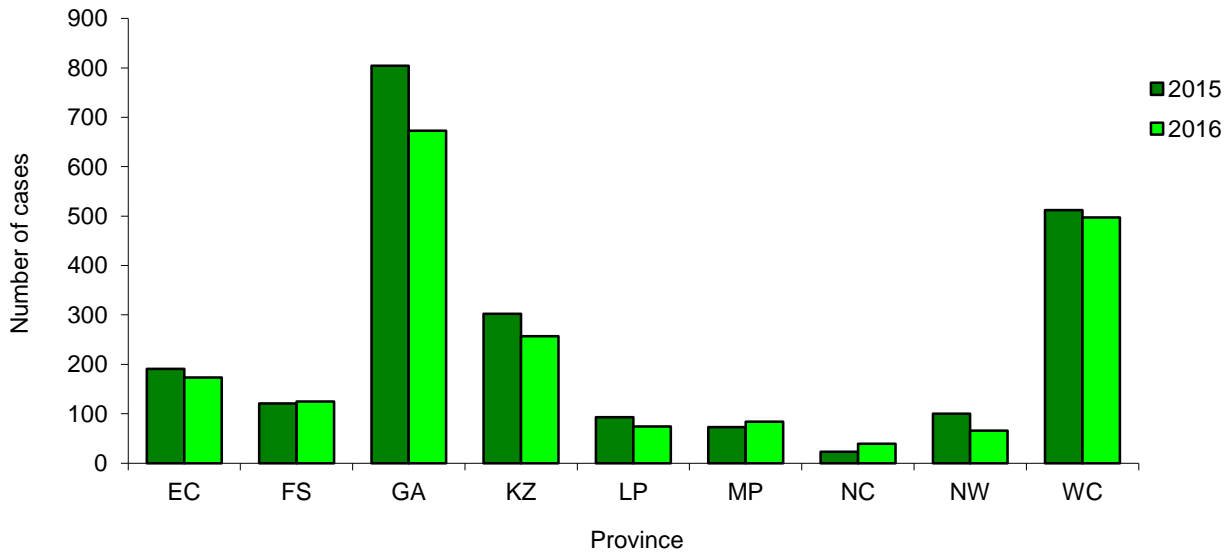
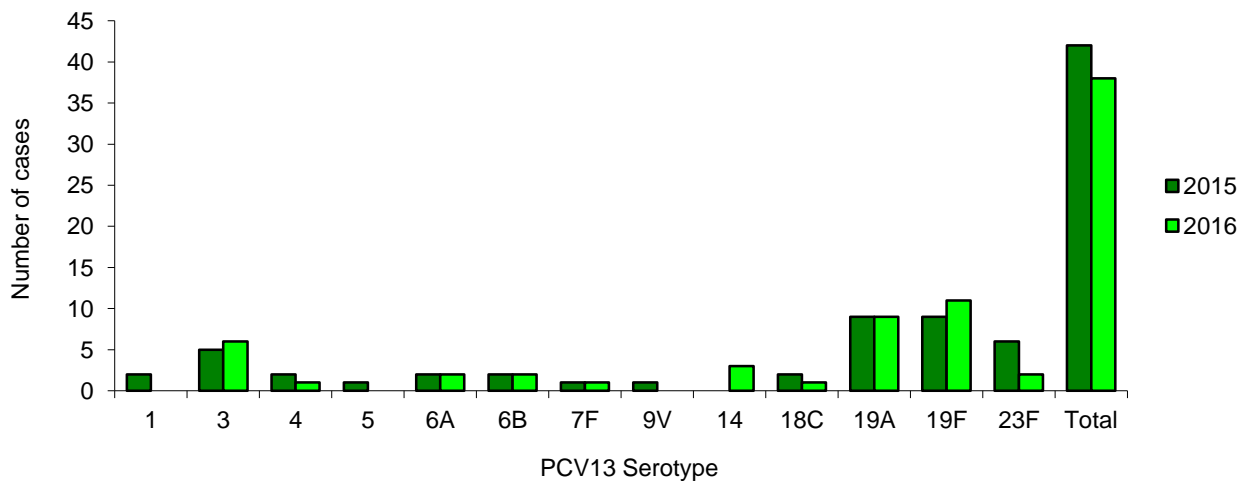


Figure 13: Number of *Streptococcus pneumoniae* cases by 13-valent pneumococcal conjugate vaccine (PCV13) serotype in children <5 years in South Africa, 2015 and 2016 (until end week 43)



*EC: Eastern Cape; FS: Free State; GA: Gauteng; KZ: KwaZulu-Natal; LP: Limpopo; MP: Mpumalanga; NC: Northern Cape; NW: North West; WC: Western Cape

Figure 14: Number of *Streptococcus pneumoniae* cases by age category in South Africa, 2015 and 2016 (until end week 43)

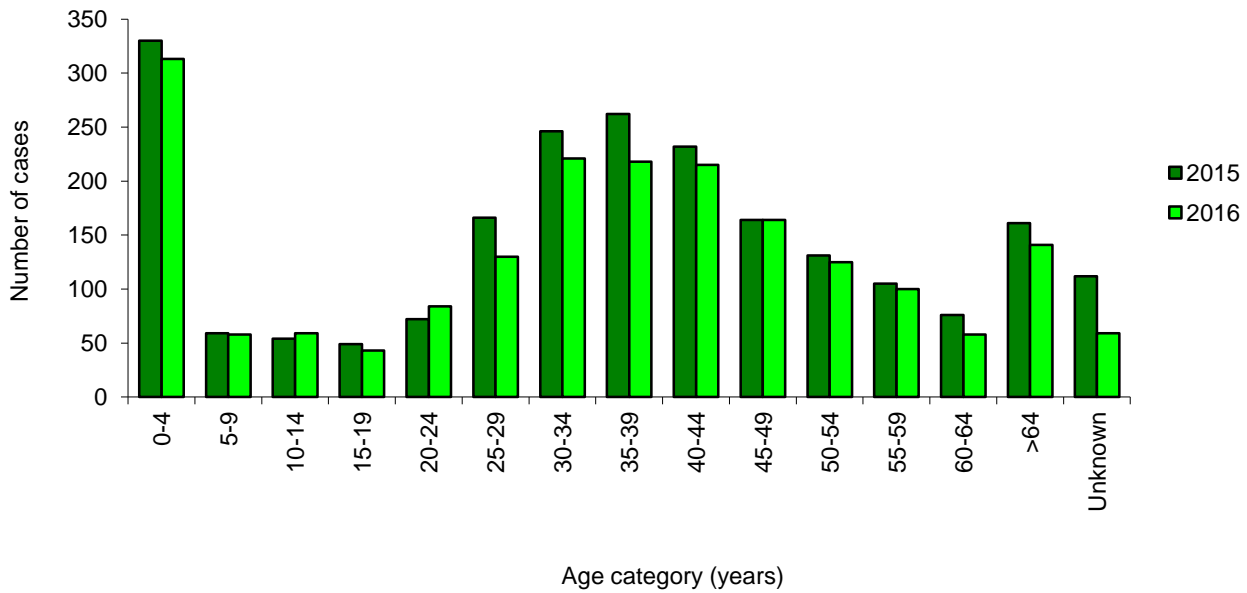
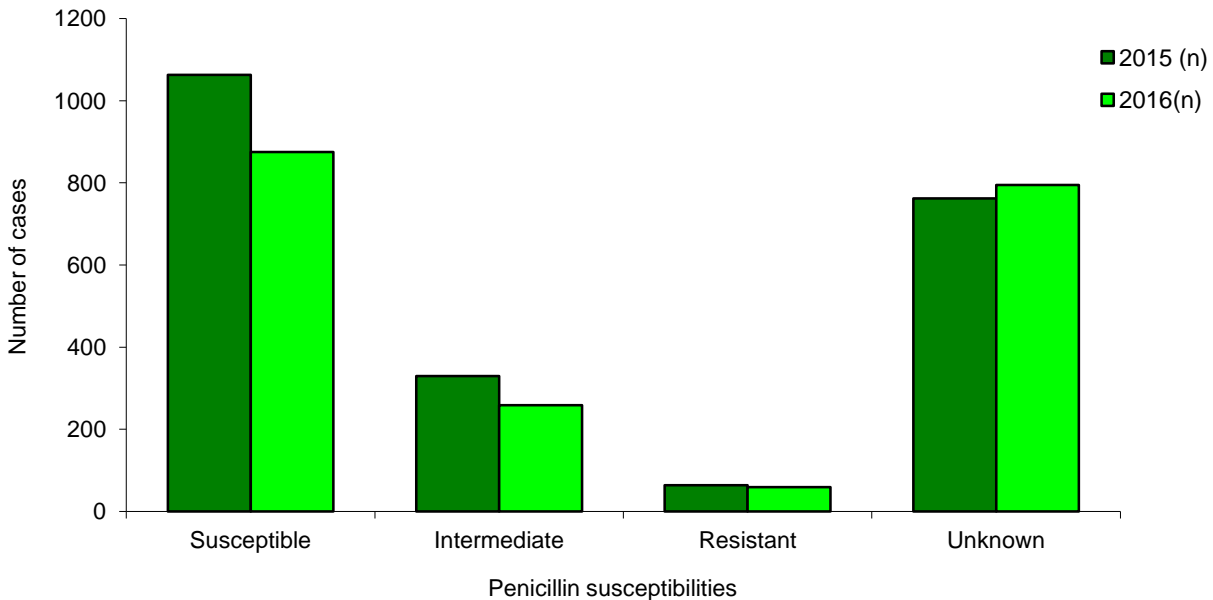


Figure 15: Number of *Streptococcus pneumoniae* cases by penicillin susceptibility, in South Africa, 2015 and 2016 (until end week 43)^



^CLSI breakpoints for penicillin (oral penicillin V) were used: susceptible, ≤ 0.06 mg/L; intermediately resistant, $= 0.12-1$ mg/L; resistant, ≥ 2 mg/L.

#Unknown: Cases with susceptibility results not yet available, no isolate, or identified on audit.