

Leptospirosis in Ireland, National Testing Patterns and Inpatient Care Utilisation



Aimee McGreal-Bellone¹, Úna Sutton-Fitzpatrick², Cillian De Gascun², Eoghan de Barra^{1,3}.

1. Dept. of Infectious Diseases, Beaumont Hospital, Beaumont Dublin. 2. National Virus Reference Laboratory, University College Dublin. 3. Dept. of International Health and Tropical Medicine, RCSI University of Medicine and Health Sciences, Dublin.



Introduction:

Leptospirosis is a zoonotic infection caused by the spirochete *Leptospira interrogans*. This study was carried out to better understand the testing patterns for Leptospirosis in Ireland and the spatial relationship to episodes of inpatient care.

Methods:

Leptospirosis testing and care episodes in the Republic of Ireland from January 2017 to August 2021 were reviewed. Testing data was obtained from the National Virus Reference Laboratory in Dublin. Clinical care episodes were extracted from the electronic national hospital discharge coding via The National Quality Assurance Improvement System (NQAIS) Clinical.

Results:

Leptospirosis testing data	
Total no. of tests performed	6,198
Male	3,786 (61%)
Hospital samples	5,998
Primary care samples	200
Total positive results	133

County	No. admissions per 100,000 pop	No of positive tests per 100,000 pop	All tests done	positivity rate
Carlow	1.8	-	-	-
Cavan	1.3	5.20	222.00	0.02
Cork	3.6	3.60	887.00	0.02
Dublin	1.8	2.00	1746.00	0.02
Kerry	3.4	1.40	23.00	0.09
Kildare	1.8	3.10	100.00	0.07
Laois	4.7	2.40	56.00	0.04
Leitrim	3.1	-	-	-
Limerick	1.5	3.60	482.00	0.01
Louth	0.8	0.80	102.00	0.01
Mayo	0.8	3.10	475.00	0.01
Meath	1.5	0.50	48.00	0.02
Monaghan	1.6	-	-	-
Roscommon	1.6	-	2.00	-
Tipperary	1.9	-	-	-
Waterford	1.7	6.90	510.00	0.02
Wexford	3.3	-	-	-
Donegal	-	0.60	369.00	0.00
Galway	-	3.90	483.00	0.01
Offaly	-	3.8	127.00	0.02
Sligo	-	4.60	453.00	0.01
West meath	-	-	82.00	-
Wicklow	-	0.70	31.00	0.03

Fig. 1 Admissions per 100,000 population and No of positive tests per 100,000 population by county, total tests done per county, positivity rate per 100,000 per county.

Results:

There were 133 positive results with a positivity rate of 2.15%, when duplicate positive tests were removed (40) the crude incidence rate was 0.38 per 100,000.

Of the positive tests, the mean age was 46 (range 12-96), and 70 were male. Dublin hospitals accounted for the most positive tests (27/93, 29%), followed by Cork (15/93, 16%).

During this period, there were 76 inpatient episodes of care relating to leptospirosis, of which mean age 44 (range 16-71), 57 (75%) were male.

Median duration of stay was 9 days (IQR 5-21 days), total bed days 1,718 of which 376 were in ICU, 28 (36.8%) of admissions were in Dublin hospitals. National case hospitalisation rate was 0.31 per 100,000 population, region specific hospitalisation varied.

Conclusion:

Leptospirosis testing patterns roughly mirrors data about inpatient episodes of care in terms of urban centres, sex and age profile. Our study shows testing positivity is in line with published data from the National Health Protection and Surveillance centre 2018 report, national notification rate of 0.4 per 100,000; however, there appears to be greater variability in hospitalisation rates by region. Highest positivity rates were in rural areas.