$P = 0.050$; respectively. G-CSF was used more frequently in patients receiving prophylaxis (60% CMV D+/R− vs. 10% CMV D−/R−, $P < 0.001$). Significant neutropenia had no impact on long-term mortality adjusted by age and transplant type (HR 1.1, 95% CI 0.6–2.1, $P = 0.709$). Significant neutropenia led to decrease immunosuppression in 90% of patients (vs. 46%, $P < 0.001$) and was associated with increased risk of rejection (HR 8.5, $P < 0.001$). In multivariate analysis for significant neutropenia in the first year, VGCV prophylaxis was the only predictor of this outcome after adjusting for confounders (HR 15.1, 95% CI 7.5–30.1, $P < 0.001$).

Conclusion: VGCV prophylaxis increased the risk of significant neutropenia by 15-fold post-SOT. No other clinical variables were useful to predict this complication. Therefore, complete blood count monitoring is still needed for all SOT recipients receiving VGCV prophylaxis.
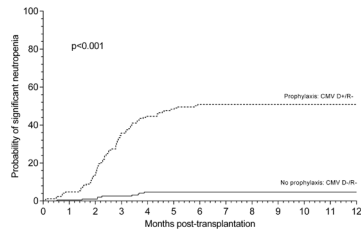

Figure 1. Cumulative incidence of significant neutropenia according to VGCV prophylaxis.

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2647. Influenza Treatment Rates in UK Primary Care Settings: Real-World Data Analysis of the CPRD, 2003–2018

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Background: Influenza remains a significant public health burden, resulting in serious morbidity and mortality globally. The National Institute for Health and Care Excellence (NICE) recommends treatment with antivirals for a broad range of high-risk influenza cases; however, anecdotal reports suggest treatment rates in the United Kingdom remain low. Real-world evidence on influenza treatment patterns in this region is limited. We therefore sought to investigate the proportion of influenza cases presenting to UK primary care facilities that receive antiviral treatment.

Methods: Data were obtained from the Clinical Practice Research Datalink (CPRD), a database of medical records from 674 primary care facilities in the UK. Cases were eligible for study inclusion if a diagnosis code for influenza or influenza-like illness (ILI) occurred between 1 January 2003 and 31 December 2018, and the medical record had sufficient data quality. Treatment was defined as prescription of an antiviral (oseltamivir, zanamivir, peramivir, or amantadine) within ±10 days of diagnosis. We examined (1) treatment rates, overall and by study year to understand time trends, (2) distribution of antiviral types prescribed, and (3) patient characteristics across treatment status.

Results: Of the 116,923 cases of influenza that met study inclusion criteria, 10,923 (9.3%) were treated with an antiviral. Treatment rates varied by study year, ranging from <1.0% in 2004 to 24.0% in 2009. The most recent study year (2018) had a treatment rate of 11.2%. Oseltamivir was the most frequent antiviral prescribed, followed by zanamivir. Treated cases of influenza were younger and more likely to be female compared with untreated cases.

Conclusion: We evaluated real-world estimates of influenza treatment rates over a 16-year period in UK primary care settings, where anecdotal reports suggested low treatment rates. Consistent with these reports, we observed low treatment rates, likely due in part to inclusion criteria and clinical guidelines specifying treatment only for high-risk cases. Subsequent analyses will investigate treatment patterns and patient characteristics in high-risk vs. low-risk cases to provide additional context for observed treatment rates.

Figure 1. Distribution of antiviral treatment status for influenza cases in CPRD, by study year (N=116,923)
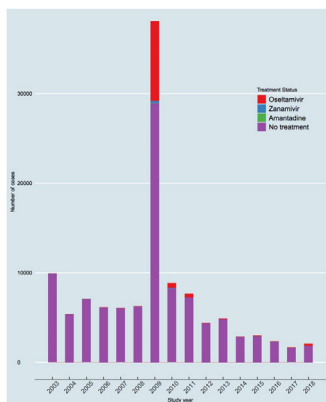
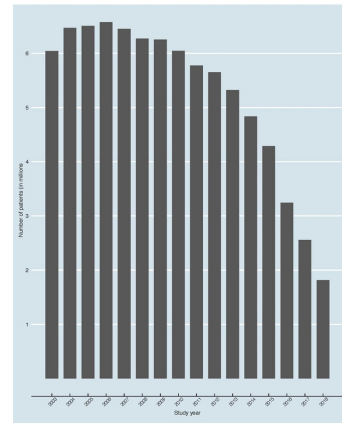Figure 2. Total number of patients with at least 1 clinical record in CPRD, by study year

Table 1. Patient characteristics of influenza cases in CPRD stratified by antiviral treatment status (N=116,923)

	Treated (n=10923)	Untreated (n=106000)	Overall (n=116923)
Gender			
Female	6,373 (58.3%)	57,361 (54.1%)	63,734 (54.5%)
Male	4,550 (41.7%)	48,633 (45.9%)	53,183 (45.5%)
Indeterminate	0 (0%)	6 (0.0%)	6 (0.0%)
Age			
<1	71 (0.7%)	663 (0.6%)	734 (0.6%)
1-12	2,852 (26.1%)	13,112 (12.4%)	15,964 (13.7%)
13-17	755 (6.9%)	4,751 (4.5%)	5,506 (4.7%)
18-64	6,414 (58.7%)	64,947 (61.3%)	71,361 (61.0%)
65+	831 (7.6%)	22,527 (21.3%)	23,358 (20.0%)
Region			
East Midlands	164 (1.5%)	2,412 (2.3%)	2,576 (2.2%)
East of England	528 (4.8%)	7,703 (7.3%)	8,231 (7.0%)
London	1,345 (12.3%)	11,158 (10.5%)	12,503 (10.7%)
North East	168 (1.5%)	2,337 (2.2%)	2,505 (2.1%)
North West	551 (5.0%)	9,048 (8.5%)	9,599 (8.2%)
Northern Ireland	192 (1.8%)	2,217 (2.1%)	2,409 (2.1%)
Scotland	2,417 (22.1%)	17,585 (16.6%)	20,002 (17.1%)
South Central	952 (8.7%)	7,808 (7.4%)	8,760 (7.5%)
South East Coast	516 (4.7%)	9,544 (9.0%)	10,060 (8.6%)
South West	1,224 (11.2%)	12,791 (12.1%)	14,015 (12.0%)
Wales	1,937 (17.7%)	13,573 (12.8%)	15,510 (13.3%)
West Midlands	810 (7.4%)	7,709 (7.3%)	8,519 (7.3%)
Yorkshire & The Humber	119 (1.1%)	2,115 (2.0%)	2,234 (1.9%)
Influenza-like Illness			
0	7,987 (73.1%)	81,969 (77.3%)	89,956 (76.9%)
1	2,936 (26.9%)	24,031 (22.7%)	26,967 (23.1%)

Table 2. Distribution of type of antiviral treatment in CPRD (N=116,923)

	Treatment type		Treatment type
2003 (n=9945)	Oseltamivir: 17 (0.2%) Zanamivir: 10 (0.1%) Amantadine: 9 (0.1%) No treatment: 9,909 (99.6%)	**2014** (n=2887)	Oseltamivir: 45 (1.6%) Zanamivir: 2 (0.1%) Amantadine: 1 (0.0%) No treatment: 2,839 (98.3%)
2004 (n=5380)	Oseltamivir: 2 (0.0%) Zanamivir: 0 (0%) Amantadine: 3 (0.1%) No treatment: 5,375 (99.9%)	**2015** (n=3010)	Oseltamivir: 78 (2.6%) Zanamivir: 2 (0.1%) Amantadine: 0 (0%) No treatment: 2,930 (97.3%)
2005 (n=7074)	Oseltamivir: 19 (0.3%) Zanamivir: 2 (0.0%) Amantadine: 3 (0.0%) No treatment: 7,050 (99.7%)	**2016** (n=2352)	Oseltamivir: 53 (2.3%) Zanamivir: 0 (0%) Amantadine: 0 (0%) No treatment: 2,299 (97.7%)
2006 (n=6159)	Oseltamivir: 12 (0.2%) Zanamivir: 0 (0%) Amantadine: 3 (0.0%) No treatment: 6,144 (99.8%)	**2017** (n=1701)	Oseltamivir: 69 (4.1%) Zanamivir: 1 (0.1%) Amantadine: 0 (0%) No treatment: 1,631 (95.9%)
2007 (n=6092)	Oseltamivir: 20 (0.3%) Zanamivir: 0 (0%) Amantadine: 0 (0%) No treatment: 6,072 (99.7%)	**2018** (n=2102)	Oseltamivir: 235 (11.2%) Zanamivir: 0 (0%) Amantadine: 1 (0.0%) No treatment: 1,866 (88.8%)
2008 (n=6277)	Oseltamivir: 45 (0.7%) Zanamivir: 8 (0.1%) Amantadine: 0 (0%) No treatment: 6,224 (99.2%)	**Overall** (n=116923)	Oseltamivir: 10,574 (9.0%) Zanamivir: 318 (0.3%) Amantadine: 31 (0.0%) No treatment: 106,000 (90.7%)
2009 (n=38084)	Oseltamivir: 8,889 (23.3%) Zanamivir: 242 (0.6%) Amantadine: 3 (0.0%) No treatment: 28,950 (76.0%)		
2010 (n=8844)	Oseltamivir: 518 (5.9%) Zanamivir: 42 (0.5%) Amantadine: 4 (0.0%) No treatment: 8,280 (93.6%)		
2011 (n=7686)	Oseltamivir: 444 (5.8%) Zanamivir: 5 (0.1%) Amantadine: 3 (0.0%) No treatment: 7,234 (94.1%)		
2012 (n=4417)	Oseltamivir: 44 (1.0%) Zanamivir: 1 (0.0%) Amantadine: 0 (0%) No treatment: 4,372 (99.0%)		
2013 (n=4913)	Oseltamivir: 84 (1.7%) Zanamivir: 3 (0.1%) Amantadine: 1 (0.0%) No treatment: 4,825 (98.2%)		

Disclosures. **All authors:** No reported disclosures.