

Exposure variable (within last 14 days)	Model UA 1 (unadjusted) n = 83,004	Model UA 2 (unadjusted) n = 83,004	Model UA 3 (unadjusted) n = 83,004	Model UA 4 (unadjusted) n = 69,461	Model UA 5 (unadjusted) n = 69,461	Model UA 6 (unadjusted) n = 83,004	Model UA 7 (unadjusted) n = 83,004
Count of cases within own household	8.20*** (8.19 – 8.81)						
Count of staff member cases within the linked school		1.17*** (1.16 – 1.18)					
Count of pupil cases within the linked school			1.12*** (1.11 – 1.12)				
Count of pupil cases within the linked school (non-year group)				1.19*** (1.18 – 1.20)			
Count of pupil cases in the linked school within the same year group					1.48*** (1.45 – 1.50)		
Count of cases in staff member's homes linked to the school.						1.47*** (1.16 – 1.18)	
Count of cases in pupils' homes linked to the school.							1.09*** (1.08 – 1.09)

Table S1 – Odds ratios of Univariate models for exposure variables. Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1.

Table S2 – Odds ratios of Univariate models for confounder variables.

Confounder Variable	Category	MS1 (n = 83,004)	MS2 (n = 83,004)	MS3 (n = 83,004)	MS4 (n = 83,004)	MS5 (n = 83,004)	MS6 (n = 83,004)	MS7 (n = 83,004)	MS9 (n = 83,004)	MS10 (n = 83,004)
Age Group	0 - 4 (ref)									
	0 - 9	1.62*** (1.47 - 1.78)								1.57*** (1.43 - 1.73)
	10 - 14	2.49*** (2.27 - 2.73)								2.69*** (2.40 - 3.02)
	15 - 19	3.63*** (3.15 - 4.19)								3.84*** (3.25 - 4.53)
	20 - 24	5.16*** (4.20 - 6.34)								2.18** (1.28 - 3.71)
	25 - 29	4.60*** (3.96 - 5.34)								2.16** (1.29 - 3.34)
	30 - 34	4.55*** (3.96 - 5.24)								2.01** (1.21 - 3.08)
	35 - 39	4.41*** (3.82 - 5.24)								1.85* (1.11 - 3.08)
	40 - 44	5.59*** (4.77 - 6.25)								2.23** (1.34 - 3.71)
	45 - 49	5.58*** (4.89 - 6.39)								2.39*** (1.43 - 3.97)
	50 - 54	5.50*** (4.77 - 6.35)								2.45*** (1.47 - 4.09)
	55 - 59	5.39*** (4.53 - 6.40)								2.55*** (1.52 - 4.29)
	60 - 64	5.52*** (4.22 - 7.21)								2.70*** (1.54 - 4.74)
	65 - 69	2.77* (1.25 - 6.12)								1.47 (0.58 - 3.76)
	70 - 74	4.39** (1.48 - 13.01)								2.35 (0.71 - 7.76)

	75 – 79	14.82*** (3.32 - 66.35)								7.96* (1.64 - 38.68)
Gender	Male(ref.)									
	Female		1.37*** (1.31 - 1.44)							1.04* (0.99 - 1.09)
Residential Settlement Type	Rural town and fringe in sparse setting			0.51*** (0.41 - 0.64)						0.60*** (0.47 - 0.75)
	Rural village and dispersed			0.90'						0.89' (0.79 - 1.01)
	Rural village and dispersed in a sparse setting			0.64*** (0.41 - 1.02)						0.69*** (0.60 - 0.81)
	Urban city and town			1.16** (1.09 - 1.24)						1.13*** (1.05 - 1.21)
	Urban city and town in a sparse setting			0.70** (0.54 - 0.89)						0.79' (0.61 - 1.01)
	Rural town and fringe (ref.)									
School Type	Primary (ref.)									
	Middle				1.04 (0.94 - 1.16)					0.60*** (0.53 - 0.69)
	Nursery or PRU				0.33* (0.14 - 0.82)					0.42' (0.17 - 1.03)
	Secondary				1.47*** (1.40 - 1.54)					0.81*** (0.74 - 0.89)
	Special				1.78*** (1.58 - 2.02)					0.81** (0.69 - 0.95)

School relation	Pupil (ref.)					2.74*** (2.60 - 2.88)				2.72*** (1.77 - 4.69)
	Staff									
Number of staff within school							1.01*** (1.01 - 1.01)			1.00** (1.00 - 1.00)
Number of pupils within the school								1.01*** (1.01 - 1.01)		1.00*** (1.00 - 1.00)
Number within household									1.26*** (1.24 - 1.28)	1.35*** (1.33 - 1.38)

Table S3 – Odds ratios of fully-adjust models. Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1.

Exposure variable (within last 14 days)	M1 Staff and Pupil Outcomes (n = 83,004)	M2 – Staff Outcomes (n = 13,543)	M3 – Pupil Outcomes (n = 69,461)
Count of cases within own household	11.81*** (11.02 – 12.15)	39.86*** (35.01 – 45.38)	9.39*** (8.94 – 9.88)
Count of staff member cases within the linked school	0.93*** (0.89 – 0.97)	0.92' (0.85 – 1.00)	0.97 (0.91– 1.01)
Count of pupil cases within the linked school (non-year for M3)	0.97*** (0.95 – 0.98)	0.98 (0.93 – 1.02)	0.92*** (0.89 – 0.94)
Count of pupil cases in the linked school within the same year group	-	-	1.12*** (1.08 – 1.15)
Count of cases in staff member's homes linked to the school.	1.11*** (1.07 – 1.15)	1.09** (1.02 – 1.17)	1.17*** (1.12 – 1.22)

Count of cases in pupils' homes linked to the school.		1.07*** (1.06 – 1.09)	1.04* (1.01 – 1.07)			1.08*** (1.06 - 1.10)
Confounder Variable	Category			Pupil only category		
Age Group	0 - 4 (ref)			Year Group	Below Year 1	0.33*** (0.26 - 0.47)
	5 - 9	1.47*** (1.30 - 1.66)	-		Year 1	0.42*** (0.29 - 0.60)
	10 - 14	2.75*** (2.37 – 3.19)	-		Year 2	0.49*** (0.34 - 0.70)
	15 - 19	3.91*** (3.15 – 4.84)	-		Year 3	0.50*** (0.35 - 0.72)
	20 - 24	1.88 (0.99 – 3.56)	0.45* (0.23 - 0.92)		Year 4	0.55*** (0.38 - 0.78)
	25 - 29	1.68 (0.90 – 3.11)	0.43* (0.22 – 0.85)		Year 5	0.56** (0.40 - 0.81)
	30 - 34	1.43 (0.77 – 2.65)	0.35** (1.78 – 0.69)		Year 6	0.61** (0.43 - 0.86)
	35 - 39	1.28 (0.69 – 2.38)	0.29*** (0.15 – 0.57)		Year 8	0.68** (0.59 - 0.79)
	40 - 44	1.37 (0.74 - 2.54)	0.30*** (0.16 – 0.60)		Year 9	0.75*** (0.65 - 0.87)
	45 - 49	1.56 (0.85 - 2.89)	0.34** (0.18 – 0.67)		Year 10	0.85* (0.74 - 0.98)
	50 - 54	1.75' (0.95 - 3.24)	0.41** (0.21 – 0.79)		Year 11 (ref)	-
	55 - 59	1.83' (0.98 – 3.41)	0.44* (0.22 – 0.87)			
	60 - 64	1.77. (0.91 – 3.45)	0.47 (0.22 – 0.98)			

	65 – 69	0.95 (0.33 – 2.71)	0.25* (0.08 – 0.82)		
	70 – 74	1.46 (0.37 – 5.73)	0.38 (0.07 – 1.83)		
	75 – 79	4.60 (0.71 – 29.91)	1.00 (0.11 – 9.44)		
Gender	Male (ref.)				
	Female	0.97 (0.90 – 1.03)	0.85 (0.70 – 1.02)		0.98 (0.92 – 1.06)
Residential Settlement Type	Rural town and fringe in sparse setting	0.65** (0.49 – 0.86)	0.50* (0.26 – 0.96)		0.73* (0.53 – 1.00)
	Rural village and dispersed	0.86' (0.73 – 1.02)	0.79 (0.57 – 1.09)		0.90 (0.54 – 0.90)
	Rural village and dispersed in a sparse setting	0.64*** (0.52 – 0.79)	0.51** (0.34 – 0.77)		0.70** (0.54 – 0.90)
	Urban city and town	1.04 (0.95 – 1.13)	1.00 (0.83 – 1.20)		1.04 (0.94 – 1.15)
	Urban city and town in a sparse setting	0.72* (0.52 – 0.99)	0.51 (0.23 – 1.14)		0.79 (0.55 – 1.13)
	Rural town and fringe (ref.)				
School Type	Primary (ref.)				
	Middle	0.65*** (0.54 – 0.78)	0.62* (0.41 – 0.93)		0.75' (0.54 – 1.04)
	Nursery or PRU	0.56 (0.19 – 1.66)	0.43 (0.05 – 3.94)		0.80 (0.23 – 2.76)
	Secondary	0.80*** (0.71 – 0.91)	0.82' (0.65 – 1.03)		0.90 (0.64 – 1.27)
	Special	1.10	1.00		0.98

		(0.90 – 1.33)	(0.75 – 1.35)		(0.66 – 1.45)
School relation	Pupil (ref.)		-		-
	Staff	2.99*** (1.70 - 5.37)	-		-
Number of staff within school		1.00** (1.00 – 1.00)	1.00 (0.99 – 1.00)		1.00 (1.00 – 1.00)
Number of pupils within the school		1.00* (1.00 – 1.00)	1.00 (1.00 – 1.00)		1.00* (1.00 – 1.00)
Number within household		0.64*** (0.61 - 0.65)	0.65*** (0.61 – 0.70)		0.65*** (0.63 – 0.68)

Missing variable	Total number of individuals with missing variable
Residential Anonymous Linking Field	4,778
Residential Settlement Type	5,587
School Type	350
Number of staff within the school	842
Number of pupils within the school	189
Other (data linkage issue)	1,508

Table S4 – Number of individuals with missing variables at the individual-level (in the Welsh COVID-19 e-cohort) before being confirmed eligible for the modelling cohort. Note this is not a count of distinct individuals, multiple persons may have multiple missing variables.