

Supplemental Table 1: Infectious disease categories and associated ICD-10 codes

Category:	Group:	ICD-10 codes:
Enteric infections	Enteric infections	A00, A01, A020, A029, A03, A04, A05, A06, A07, A08
	Enteric symptoms	A09, I880, K528, K529, R11
Upper respiratory tract infections	Upper RTI	J00, J01, J02, J03, J04, J05, J06, J32, J340, J36, J37, J390, J391
	Ear infections	H600, H601, H602, H603, H608, H609, H62, H65, H66, H67, H680, H70, H730, H750, H830, H940
Lower respiratory tract infections	Acute lower RTI	A481, A482, B59, J09, J10, J11, J12, J13, J14, J15, J16, J17, J18, J20, J21, J22
	Chronic lower RTI	J40, J41, J42, J440, J47, J85, J86, J988
	Tuberculosis	A15, A16, A17, A18, A19, N740, N741, J65
Genitourinary infections	Kidney infections	N00, N05, N10, N136, N151
	Urinary tract infections	N300, N341, N351, N37, N390
	Reproductive system infections, male	N410, N411, N412, N413, N431, N45, N481, N482, N490, N49, N51
	Reproductive system infections, female	N70, N71, N72, N73, N74, N751, N764, N87
Other infections	Sepsis	A391, A392, A393, A394, A395, A398, A399 A40, A41, A483, A021, A327
	HIV/AIDS	B20, B21. B22, B23, B24
	Sexually transmitted infections	A50, A51, A52, A53, A54, A55, A56, A57, A58, A59, A60, A63, A64, N290
	CNS viral infections	A801, A802, A803, A804, A809, A811, A812, A818, A819, A82, A83, A84, A85, A86, A87, A88, A89
	CNS general infections	G00, G01, G02, G030, G039, G04, G05, G06, G07, G08, G09, G610, A321, A390
	Eye infections	B30, H000, H03, H043, H050, H100, H102, H103, H109, H130, H131, H160, H190, H191, H192, H220, H440, H451
	Oral infections	K02, K044, K046, K050, K052, K053, K113, K122
	Heart and Circulatory infections	B332, I00, I01, I02, I05, I06, I07, I08, I09, I301, I33, I38, I39, I400, I410, I411, I412, I430, I716, I790, I791
	Gastrointestinal tract infections	K230, K231, K25, K26, K27, K28, K293, K294, K295, K35, K36, K37, K61, K630, K632, K650, K678, K908, K930
	Hepatic infections	K750, K770, K830
	Viral Hepatitis	B15, B16, B17, B18, B19
	Skin infections, typical	A46, L00, L01, L02, L03, L04, L050, L08

Skin infections, other	B86, T009, T633, T634, T793
Breast infections	N61
Osteomyelitis	M462, M463, M464, M465
Joint infections	M00, M01
Connective tissue infections	M021, M023, M03, M600, M630, M631, M632, M650, M651, M680, M710, M711, M896
Neoplasms from infection	C11, C161, C162, C163, C164, C165, C166, C168, C169, C210, C211, C220, C46, C53, D002, D013, D06
Postoperative infections	T802, T814, T826, T827, T835, T836, T845, T846, T847, T857, T874
Adverse effect of ID treatment	R761, R762, T36, T37, T485, T487, T490, T495, T496, T499, T788, T789, T880, T881, T887
Other Bacterial infections	A20, A21, A22, A23, A24, A25, A26, A27, A28, A30, A31, A320, A328, A329, A33, A34, A35, A36, A37, A38, A42, A43, A44, A480, A484, A488, A49, A65, A66, A67, A68, A69, A70, A71, A74, A75, A77, A78, A79, B95, B96
Other Viral infections	A90, A91, A92, A93, A94, A95, A96, A98, A99, B00, B01, B02, B03, B04, B05, B06, B07, A08, B09, B25, B26, B27, B33, B34, B97
Other Mycoses	B35, B36, B37, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49
Other Protozoan infections	B50, B51, B52, B53, B54, B55, B56, B57, B58, B60, B64
Other ID	B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B85, B87, B88, B89, B94, B99, E033, E321, F024, F071, I88, T64
Perinatal infections	P002, P027, P23, P35, P36, P37, P38, P39

ICD-10, International Classification of Disease, Tenth Revision. RTI, respiratory tract infections. CNS, central nervous system.

Supplemental Table 2: The most frequent ICD-codes in each infectious disease category.

Overall infections		Upper respiratory infections		Lower respiratory infections		Enteric infections		Genitourinary infections	
ICD	% (n)	ICD	% (n)	ICD	% (n)	ICD	% (n)	ICD	% (n)
A099	10.8 (34 387)	J069	36.0 (24 021)	J210	23.9 (19 685)	A099	50.5 (34 387)	N109	79.9 (16 645)
B349	9.7 (30 965)	J050	19.3 (12 890)	J209	20.3 (16 717)	A084	18.4 (12 518)	N390	13.1 (2724)
J069	7.6 (24 021)	H660	11.0 (7360)	J189	17.7 (14 595)	R119	12.5 (8511)	N481	2.1 (445)
J210	6.2 (19 685)	H669	7.2 (4798)	J159	9.8 (8038)	A080	7.5 (5096)	N459	1.6 (334)
J209	5.3 (16 717)	J039	4.5 (3012)	J219	8.1 (6690)	K529	3.5 (2371)	N300	1.6 (340)
N109	5.2 (16 645)	J030	3.2 (2125)	J121	4.9 (4028)	A090	2.9 (2000)	N009	0.5 (103)
J189	4.6 (14 595)	H659	3.2 (2103)	J205	4.9 (4012)	A081	1.0 (690)	N492	0.2 (48)
J050	4.1 (12 890)	J012	2.2 (1488)	J129	1.8 (1500)	A082	0.7 (487)	N136	0.2 (48)
A084	3.9 (12 518)	J009	1.9 (1286)	J180	1.6 (1295)	A020	0.6 (405)	N059	0.1 (19)
R119	2.7 (8511)	H653	1.9 (1272)	J101	0.7 (599)	A045	0.4 (283)	N450	0.1 (13)
Other	40 (127 146)	Other	9.6 (6388)	Other	6.3 (5150)	Other	1.9 (1284)	Other	0.5 (106)
Total	100 (318 080)	Total	100 (66 743)	Total	100 (82 309)	Total	100 (68 032)	Total	100 (20 825)

Analyses excluded children with missing data (n=42 842), leaving 1 785 588 children.

Supplemental Table 3: Associations between socioeconomic demographic factors and hospitalisation for overall, upper respiratory, lower respiratory, enteric and genitourinary infections.

	Overall infections		Upper respiratory infections		Lower respiratory infections		Enteric infections		Genitourinary infections	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Maternal education:	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
≥13	-	1 ref	-	1 ref	-	1 ref	-	1 ref	-	1 ref
10–12	-	1.13 (1.12–1.14)	-	1.19 (1.17–1.21)	-	1.12 (1.10–1.14)	-	1.13 (1.11–1.15)	-	1.10 (1.07–1.14)
≤9	-	1.35 (1.33–1.37)	-	1.43 (1.40–1.47)	-	1.40 (1.37–1.44)	-	1.35 (1.31–1.38)	-	1.13 (1.08–1.19)
Household income:										
Q5	-	1 ref	-	1 ref	-	1 ref	-	1 ref	-	1 ref
Q4	-	1.06 (1.04–1.07)	-	1.15 (1.12–1.18)	-	0.99 (0.97–1.02)	-	1.06 (1.03–1.09)	-	1.09 (1.04–1.15)
Q3	-	1.08 (1.06–1.09)	-	1.19 (1.16–1.22)	-	0.97 (0.95–1.00)	-	1.08 (1.05–1.11)	-	1.07 (1.02–1.12)
Q2	-	1.09 (1.07–1.11)	-	1.20 (1.17–1.24)	-	0.97 (0.95–0.98)	-	1.14 (1.11–1.16)	-	1.06 (1.01–1.11)
Q1	-	1.10 (1.08–1.12)	-	1.19 (1.16–1.23)	-	0.95 (0.92–0.97)	-	1.21 (1.18–1.25)	-	1.05 (1.00–1.10)
Sex/gender:										
Female/girl	-	1 ref	-	1 ref	-	1 ref	-	1 ref	-	1 ref
Male/boy	-	1.22 (1.21–1.23)	-	1.41 (1.39–1.43)	-	1.34 (1.32–1.36)	-	1.07 (1.05–1.08)	-	0.77 (0.75–0.79)
Maternal migration status:										
Non-immigrant	-	1 ref	-	1 ref	-	1 ref	-	1 ref	-	1 ref
Immigrant	-	0.97 (0.96–0.98)	-	0.94 (0.92–0.96)	-	0.91 (0.89–0.92)	-	1.06 (1.84–1.08)	-	1.11 (1.06–1.15)
Year of birth:										
Per year	0.97 (0.97–0.97)	0.98 (0.97–0.98)	0.96 (0.96–0.96)	0.96 (0.96–0.96)	0.99 (0.99–0.99)	0.99 (0.99–1.00)	0.96 (0.96–0.96)	0.96 (0.96–0.97)	0.98 (0.97–0.98)	0.98 (0.98–0.98)
AUC	0.54 (0.54–0.54)	0.56 (0.56–0.56)	0.56 (0.56–0.57)	0.59 (0.59–0.60)	0.51 (0.51–0.51)	0.55 (0.55–0.55)	0.56 (0.56–0.56)	0.57 (0.57–0.57)	0.53 (0.53–0.54)	0.56 (0.55–0.56)
ΔAUC*	-	0.02	-	0.03	-	0.04	-	0.01	-	0.03

Analyses excluded children with missing data (n=42 842), leaving 1 785 588 children. The analyses included 249 644 overall hospitalisations, 59 928 upper respiratory hospitalisations, 73 465 lower respiratory hospitalisations, 62 985 enteric hospitalisations and 18 750 genitourinary hospitalisations. Model 1 included year of birth. Model 2 included maternal education, household income maternal immigration, sex/gender and year of birth.

*AUC model with maternal education, household income maternal immigration, sex/gender and year of birth compared to AUC model with year of birth.

OR, odds ratio; CI confidence interval; AUC, area under the receiver operating characteristic curve; ΔAUC, incremental change in AUC.

Supplemental Table 4: Associations between 150 intersectional strata and hospitalisation for infectious diseases, overall and categories of infectious diseases

Maternal migration status:	Sex/gender:	Maternal education:	Family income:	Overall infections	Upper respiratory infections	Lower respiratory infections	Enteric infections	Genitourinary infections	
				OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	
Non-immigrant	Female/girl	≥13 years	Q5	1 ref	ref 1	1 ref	1 ref	1 ref	
			Q4	1.07 (1.04–1.10)	1.15 (1.08–1.22)	0.96 (0.91–1.01)	1.10 (1.04–1.16)	1.08 (0.99–1.17)	
			Q3	1.06 (1.03–1.09)	1.22 (1.14–1.30)	0.93 (0.88–0.98)	1.09 (1.03–1.15)	1.03 (0.93–1.13)	
			Q2	1.08 (1.05–1.12)	1.25 (1.17–1.34)	0.91 (0.86–0.97)	1.12 (1.05–1.19)	1.15 (1.03–1.27)	
			Q1	1.02 (0.98–1.07)	1.03 (0.94–1.13)	0.85 (0.79–0.92)	1.14 (1.06–1.24)	1.05 (0.92–1.20)	
		10–12 years	Q5	1.13 (1.09–1.17)	1.20 (1.12–1.29)	0.99 (0.93–1.05)	1.15 (1.08–1.23)	1.10 (0.99–1.23)	
			Q4	1.16 (1.12–1.19)	1.34 (1.26–1.42)	1.04 (0.99–1.10)	1.16 (1.10–1.23)	1.14 (1.04–1.25)	
			Q3	1.19 (1.15–1.22)	1.38 (1.30–1.46)	1.04 (0.99–1.09)	1.19 (1.13–1.25)	1.22 (1.12–1.33)	
			Q2	1.22 (1.19–1.26)	1.42 (1.34–1.51)	1.05 (1.00–1.11)	1.25 (1.19–1.32)	1.21 (1.11–1.32)	
			Q1	1.23 (1.19–1.27)	1.37 (1.29–1.47)	1.02 (0.97–1.09)	1.29 (1.21–1.37)	1.26 (1.14–1.39)	
	≤9 years	Q5	1.23 (1.12–1.35)	1.45 (1.21–1.74)	1.14 (0.97–1.35)	1.11 (0.92–1.33)	1.33 (1.01–1.75)		
		Q4	1.41 (1.32–1.51)	1.62 (1.43–1.85)	1.26 (1.11–1.42)	1.36 (1.20–1.54)	1.35 (1.10–1.66)		
		Q3	1.42 (1.34–1.50)	1.85 (1.66–2.06)	1.28 (1.15–1.42)	1.31 (1.17–1.46)	1.41 (1.18–1.68)		
		Q2	1.48 (1.41–1.56)	1.76 (1.60–1.93)	1.39 (1.27–1.51)	1.45 (1.33–1.59)	1.20 (1.02–1.42)		
		Q1	1.48 (1.43–1.54)	1.84 (1.71–1.98)	1.27 (1.18–1.36)	1.50 (1.39–1.61)	1.12 (0.99–1.28)		
		Male/boy	≥13 years	Q5	1.24 (1.21–1.27)	1.45 (1.37–1.52)	1.33 (1.28–1.39)	1.04 (0.99–1.09)	0.82 (0.75–0.89)
				Q4	1.29 (1.25–1.32)	1.64 (1.56–1.73)	1.31 (1.25–1.37)	1.07 (1.02–1.13)	0.90 (0.82–0.98)
				Q3	1.33 (1.29–1.37)	1.71 (1.61–1.81)	1.24 (1.18–1.30)	1.15 (1.09–1.21)	0.85 (0.77–0.94)
				Q2	1.32 (1.28–1.36)	1.65 (1.55–1.76)	1.24 (1.17–1.31)	1.19 (1.12–1.27)	0.82 (0.74–0.92)
				Q1	1.25 (1.20–1.30)	1.60 (1.48–1.73)	1.17 (1.09–1.25)	1.21 (1.12–1.30)	0.73 (0.63–0.85)

Other high-income countries	Female/girl	10–12 years	Q5	1.35 (1.30–1.39)	1.68 (1.58–1.79)	1.36 (1.29–1.44)	1.17 (1.10–1.25)	0.82 (0.73–0.92)
			Q4	1.44 (1.40–1.48)	1.93 (1.83–2.04)	1.43 (1.37–1.50)	1.21 (1.15–1.28)	0.97 (0.89–1.07)
			Q3	1.48 (1.44–1.52)	1.95 (1.85–2.06)	1.40 (1.34–1.47)	1.23 (1.17–1.30)	0.96 (0.88–1.05)
			Q2	1.46 (1.42–1.50)	1.95 (1.85–2.06)	1.37 (1.31–1.44)	1.30 (1.23–1.37)	0.81 (0.73–0.89)
			Q1	1.50 (1.45–1.54)	1.97 (1.86–2.10)	1.36 (1.29–1.43)	1.40 (1.32–1.48)	0.87 (0.78–0.97)
		≤9 years	Q5	1.53 (1.41–1.67)	1.97 (1.68–2.30)	1.58 (1.37–1.82)	1.34 (1.13–1.57)	1.12 (0.83–1.50)
			Q4	1.61 (1.51–1.72)	2.30 (2.06–2.57)	1.60 (1.44–1.78)	1.32 (1.17–1.49)	0.78 (0.60–1.01)
			Q3	1.65 (1.56–1.74)	2.11 (1.91–2.33)	1.80 (1.65–1.96)	1.38 (1.25–1.54)	0.82 (0.66–1.02)
			Q2	1.81 (1.73–1.90)	2.33 (2.14–2.53)	1.75 (1.62–1.89)	1.66 (1.53–1.81)	0.91 (0.76–1.09)
			Q1	1.80 (1.73–1.86)	2.40 (2.24–2.57)	1.71 (1.61–1.82)	1.73 (1.62–1.85)	0.90 (0.79–1.04)
	≥13 years	Q5	0.82 (0.76–0.89)	0.76 (0.64–0.91)	0.85 (0.75–0.97)	0.84 (0.73–0.97)	0.93 (0.74–1.17)	
		Q4	0.91 (0.82–1.00)	0.90 (0.72–1.11)	0.69 (0.57–0.83)	0.98 (0.82–1.17)	1.09 (0.82–1.45)	
		Q3	0.90 (0.81–1.00)	0.95 (0.76–1.20)	0.72 (0.58–0.88)	1.05 (0.87–1.28)	0.89 (0.63–1.25)	
		Q2	0.86 (0.78–0.95)	0.87 (0.70–1.09)	0.74 (0.62–0.89)	0.98 (0.82–1.18)	1.16 (0.88–1.53)	
		Q1	0.82 (0.75–0.91)	0.82 (0.66–1.02)	0.62 (0.51–0.75)	0.84 (0.70–1.02)	1.13 (0.86–1.48)	
		10–12 years	Q5	1.10 (0.96–1.26)	1.08 (0.81–1.45)	1.03 (0.80–1.31)	1.20 (0.94–1.53)	0.96 (0.61–1.51)
			Q4	1.05 (0.93–1.19)	1.17 (0.91–1.51)	0.81 (0.63–1.04)	1.15 (0.91–1.43)	1.54 (1.11–2.14)
			Q3	1.14 (1.02–1.27)	1.26 (1.00–1.59)	1.00 (0.81–1.23)	0.99 (0.79–1.24)	1.15 (0.81–1.63)
			Q2	1.03 (0.92–1.14)	1.35 (1.11–1.65)	0.84 (0.69–1.03)	1.10 (0.91–1.33)	0.94 (0.67–1.33)
			Q1	0.98 (0.89–1.08)	1.00 (0.81–1.24)	0.85 (0.71–1.02)	0.93 (0.77–1.13)	1.10 (0.82–1.48)
≤9 years	Q5	0.87 (0.60–1.25)	1.35 (0.72–2.55)	0.93 (0.50–1.76)	0.71 (0.34–1.51)	0.90 (0.29–2.82)		
	Q4	1.09 (0.83–1.44)	1.10 (0.62–1.95)	1.07 (0.66–1.74)	1.19 (0.73–1.94)	0.61 (0.19–1.89)		
	Q3	1.35 (1.06–1.71)	1.49 (0.93–2.39)	1.38 (0.92–2.06)	1.32 (0.85–2.05)	1.08 (0.48–2.41)		
	Q2	1.41 (1.18–1.69)	1.64 (1.16–2.30)	1.00 (0.70–1.41)	1.31 (0.94–1.82)	1.10 (0.61–2.01)		

Upper-middle-income countries	Male/boy	≥13 years	Q1	1.54 (1.37–1.74)	1.67 (1.32–2.11)	1.15 (0.91–1.44)	1.76 (1.44–2.15)	1.82 (1.31–2.52)
			Q5	0.99 (0.93–1.07)	1.12 (0.97–1.29)	0.99 (0.88–1.12)	0.91 (0.80–1.04)	0.66 (0.51–0.86)
			Q4	1.07 (0.98–1.17)	1.28 (1.07–1.53)	1.13 (0.97–1.30)	0.93 (0.78–1.11)	0.80 (0.59–1.10)
		10–12 years	Q3	1.05 (0.95–1.16)	1.44 (1.19–1.74)	0.99 (0.83–1.18)	0.80 (0.65–1.00)	0.68 (0.47–1.00)
			Q2	1.13 (1.03–1.23)	1.33 (1.12–1.60)	0.95 (0.80–1.11)	1.25 (1.06–1.46)	0.78 (0.56–1.09)
			Q1	1.02 (0.94–1.12)	1.15 (0.96–1.38)	0.82 (0.70–0.97)	0.78 (0.65–0.94)	0.90 (0.67–1.20)
			Q5	1.26 (1.11–1.43)	1.48 (1.16–1.88)	1.31 (1.07–1.62)	1.17 (0.92–1.47)	0.86 (0.54–1.35)
			Q4	1.32 (1.18–1.48)	1.99 (1.64–2.41)	1.20 (0.98–1.46)	1.11 (0.89–1.39)	0.91 (0.60–1.36)
			Q3	1.33 (1.19–1.48)	1.51 (1.23–1.87)	1.25 (1.04–1.51)	1.28 (1.05–1.56)	0.96 (0.66–1.41)
	≤9 years	Q2	1.26 (1.15–1.39)	1.76 (1.48–2.09)	1.14 (0.96–1.35)	1.08 (0.90–1.30)	0.95 (0.68–1.32)	
		Q1	1.22 (1.11–1.33)	1.47 (1.24–1.75)	0.99 (0.84–1.17)	1.43 (1.23–1.67)	0.95 (0.70–1.29)	
		Q5	1.33 (0.98–1.79)	1.39 (0.76–2.53)	1.31 (0.78–2.21)	1.55 (0.94–2.57)	0.56 (0.14–2.23)	
	Female/girl	≥13 years	Q4	1.34 (1.04–1.72)	1.79 (1.14–2.82)	1.47 (0.97–2.22)	1.15 (0.71–1.87)	0.58 (0.19–1.82)
			Q3	1.57 (1.27–1.95)	1.73 (1.15–2.61)	1.56 (1.09–2.23)	1.20 (0.78–1.84)	0.47 (0.15–1.45)
			Q2	1.65 (1.39–1.96)	2.24 (1.66–3.03)	1.46 (1.08–1.97)	1.73 (1.28–2.34)	1.38 (0.79–2.39)
			Q1	1.83 (1.64–2.05)	2.13 (1.73–2.61)	1.77 (1.47–2.12)	1.74 (1.43–2.12)	0.85 (0.54–1.35)
			Q1	0.85 (0.76–0.96)	0.68 (0.51–0.90)	0.77 (0.63–0.95)	1.03 (0.84–1.26)	0.94 (0.66–1.33)
		10–12 years	Q2	1.08 (0.97–1.21)	1.22 (0.97–1.53)	0.70 (0.56–0.88)	1.10 (0.90–1.36)	1.45 (1.08–1.95)
Q3			1.03 (0.93–1.14)	1.06 (0.84–1.33)	0.79 (0.64–0.96)	1.06 (0.87–1.29)	1.37 (1.03–1.82)	
Q4			1.09 (1.01–1.17)	1.26 (1.08–1.48)	0.81 (0.70–0.94)	0.98 (0.84–1.15)	1.51 (1.23–1.86)	
Q5			1.02 (0.96–1.09)	1.12 (0.97–1.29)	0.78 (0.69–0.89)	1.11 (0.98–1.25)	1.27 (1.05–1.53)	
10–12 years	Q5	0.91 (0.75–1.09)	0.91 (0.60–1.38)	0.74 (0.52–1.05)	1.08 (0.77–1.51)	1.84 (1.20–2.81)		
	Q4	1.21 (1.08–1.37)	1.25 (0.98–1.61)	0.94 (0.75–1.18)	1.20 (0.96–1.50)	2.06 (1.55–2.74)		
	Q3	1.32 (1.20–1.44)	1.61 (1.35–1.93)	0.96 (0.80–1.15)	1.35 (1.14–1.61)	1.58 (1.22–2.04)		

			Q2	1.22 (1.14–1.31)	1.33 (1.16–1.54)	1.01 (0.89–1.15)	1.17 (1.03–1.34)	1.72 (1.43–2.07)
			Q1	1.27 (1.20–1.34)	1.36 (1.21–1.53)	0.98 (0.88–1.09)	1.34 (1.21–1.48)	1.64 (1.40–1.91)
		≤9 years	Q5	1.07 (0.83–1.38)	0.71 (0.37–1.37)	1.10 (0.72–1.68)	0.83 (0.49–1.42)	1.70 (0.91–3.18)
			Q4	1.20 (1.01–1.42)	1.03 (0.70–1.52)	1.02 (0.75–1.40)	1.30 (0.96–1.77)	1.18 (0.70–2.01)
			Q3	1.38 (1.22–1.57)	1.42 (1.09–1.85)	1.30 (1.05–1.62)	1.33 (1.05–1.69)	1.63 (1.14–2.32)
			Q2	1.27 (1.18–1.37)	1.73 (1.50–1.99)	1.07 (0.94–1.23)	1.18 (1.02–1.36)	1.54 (1.25–1.91)
			Q1	1.44 (1.37–1.52)	1.64 (1.48–1.83)	1.13 (1.02–1.24)	1.67 (1.52–1.83)	1.52 (1.30–1.78)
	Male/boy	≥13 years	Q5	0.99 (0.89–1.09)	1.16 (0.94–1.44)	1.02 (0.85–1.21)	0.80 (0.64–1.00)	1.08 (0.79–1.48)
			Q4	1.19 (1.07–1.32)	1.67 (1.38–2.03)	1.02 (0.85–1.23)	1.00 (0.80–1.23)	0.84 (0.58–1.22)
			Q3	1.27 (1.15–1.39)	1.74 (1.46–2.08)	0.97 (0.81–1.16)	1.35 (1.14–1.61)	0.97 (0.69–1.34)
			Q2	1.29 (1.20–1.38)	1.67 (1.46–1.92)	1.09 (0.96–1.24)	1.20 (1.05–1.38)	0.95 (0.74–1.22)
			Q1	1.26 (1.19–1.34)	1.53 (1.36–1.73)	0.98 (0.88–1.10)	1.39 (1.25–1.54)	0.93 (0.75–1.15)
		10–12 years	Q5	1.34 (1.14–1.58)	1.65 (1.21–2.26)	1.38 (1.05–1.80)	1.00 (0.71–1.41)	0.98 (0.55–1.74)
			Q4	1.45 (1.30–1.62)	1.86 (1.51–2.29)	1.35 (1.12–1.63)	1.32 (1.06–1.63)	1.08 (0.74–1.59)
			Q3	1.52 (1.39–1.65)	2.07 (1.77–2.42)	1.28 (1.10–1.49)	1.40 (1.19–1.64)	1.11 (0.83–1.50)
			Q2	1.61 (1.52–1.72)	2.28 (2.04–2.54)	1.27 (1.14–1.42)	1.43 (1.27–1.61)	1.24 (1.01–1.52)
			Q1	1.58 (1.50–1.66)	2.17 (1.98–2.39)	1.31 (1.19–1.44)	1.71 (1.56–1.87)	0.89 (0.73–1.09)
		≤9 years	Q5	1.37 (1.09–1.72)	1.38 (0.86–2.22)	1.40 (0.96–2.03)	1.40 (0.93–2.11)	0.97 (0.43–2.17)
			Q4	1.71 (1.46–2.00)	1.66 (1.20–2.28)	1.57 (1.21–2.04)	1.94 (1.49–2.52)	1.13 (0.65–1.96)
			Q3	1.57 (1.39–1.77)	2.30 (1.87–2.83)	1.17 (0.94–1.46)	1.56 (1.26–1.93)	1.00 (0.65–1.54)
			Q2	1.78 (1.66–1.90)	2.44 (2.16–2.75)	1.60 (1.43–1.79)	1.68 (1.49–1.91)	1.12 (0.88–1.43)
			Q1	1.74 (1.66–1.83)	2.38 (2.18–2.61)	1.45 (1.33–1.59)	1.78 (1.63–1.95)	0.96 (0.79–1.16)
Lower-middle-income countries	Female/girl	≥13 years	Q5	1.09 (0.95–1.25)	0.75 (0.52–1.09)	0.95 (0.74–1.22)	1.08 (0.82–1.41)	1.39 (0.94–2.06)
			Q4	1.07 (0.91–1.25)	1.27 (0.93–1.74)	0.89 (0.67–1.18)	1.17 (0.88–1.55)	1.01 (0.61–1.66)

		Q3	1.21 (1.05–1.40)	1.11 (0.80–1.53)	1.15 (0.90–1.47)	1.17 (0.89–1.54)	1.38 (0.91–2.09)
		Q2	1.09 (0.98–1.22)	1.09 (0.86–1.39)	0.83 (0.67–1.02)	1.25 (1.03–1.53)	1.02 (0.71–1.46)
		Q1	1.13 (1.03–1.24)	1.15 (0.94–1.40)	0.86 (0.72–1.03)	1.31 (1.11–1.55)	1.07 (0.79–1.44)
	10–12 years	Q5	1.00 (0.77–1.29)	0.88 (0.48–1.59)	0.73 (0.43–1.21)	1.21 (0.78–1.90)	1.18 (0.56–2.49)
		Q4	1.23 (1.03–1.48)	1.45 (1.01–2.06)	1.32 (0.98–1.77)	1.41 (1.03–1.93)	1.52 (0.93–2.50)
		Q3	1.14 (0.97–1.33)	1.49 (1.11–2.02)	1.14 (0.87–1.49)	1.04 (0.77–1.42)	0.97 (0.57–1.65)
		Q2	1.08 (0.96–1.22)	1.23 (0.96–1.56)	0.86 (0.69–1.08)	1.28 (1.04–1.58)	0.97 (0.66–1.44)
		Q1	1.21 (1.11–1.33)	1.25 (1.03–1.52)	1.03 (0.87–1.22)	1.33 (1.13–1.57)	1.39 (1.06–1.81)
	≤9 years	Q5	0.97 (0.60–1.56)	1.04 (0.39–2.81)	1.18 (0.55–2.51)	1.61 (0.79–3.28)	1.12 (0.28–4.53)
		Q4	1.10 (0.79–1.54)	0.96 (0.45–2.04)	0.89 (0.48–1.68)	1.05 (0.56–1.97)	1.20 (0.45–3.21)
		Q3	1.19 (0.92–1.54)	1.50 (0.92–2.44)	0.95 (0.58–1.54)	1.55 (1.02–2.36)	0.94 (0.39–2.27)
		Q2	1.31 (1.13–1.53)	1.34 (0.98–1.84)	1.23 (0.95–1.60)	1.45 (1.11–1.90)	0.85 (0.48–1.50)
		Q1	1.19 (1.06–1.33)	1.51 (1.21–1.88)	0.99 (0.80–1.22)	1.23 (1.00–1.52)	0.91 (0.61–1.36)
Male/boy	≥13 years	Q5	0.96 (0.83–1.11)	1.05 (0.77–1.44)	0.99 (0.78–1.27)	0.98 (0.74–1.30)	0.63 (0.35–1.11)
		Q4	1.48 (1.30–1.69)	1.57 (1.20–2.06)	1.33 (1.06–1.67)	1.64 (1.30–2.08)	1.34 (0.88–2.03)
		Q3	1.16 (1.00–1.34)	1.12 (0.81–1.54)	1.05 (0.81–1.35)	1.28 (0.98–1.66)	0.94 (0.57–1.54)
		Q2	1.28 (1.16–1.42)	1.49 (1.22–1.83)	1.05 (0.87–1.25)	1.39 (1.16–1.67)	0.81 (0.55–1.18)
		Q1	1.42 (1.30–1.55)	1.91 (1.63–2.23)	1.10 (0.94–1.29)	1.50 (1.28–1.74)	0.92 (0.67–1.26)
	10–12 years	Q1	1.29 (1.04–1.60)	1.52 (0.99–2.33)	1.14 (0.77–1.68)	1.63 (1.13–2.34)	0.72 (0.30–1.73)
		Q2	1.21 (1.02–1.45)	1.13 (0.76–1.66)	1.25 (0.93–1.68)	1.28 (0.93–1.77)	0.82 (0.43–1.59)
		Q3	1.39 (1.20–1.60)	1.65 (1.25–2.17)	1.41 (1.12–1.78)	1.24 (0.94–1.63)	0.95 (0.57–1.59)
		Q4	1.50 (1.35–1.66)	1.81 (1.49–2.20)	1.37 (1.15–1.63)	1.57 (1.31–1.88)	0.82 (0.54–1.23)
		Q5	1.45 (1.33–1.58)	1.94 (1.66–2.27)	1.14 (0.97–1.33)	1.58 (1.36–1.84)	1.05 (0.78–1.41)
	≤9 years	Q5	0.97 (0.62–1.53)	0.93 (0.34–2.50)	1.24 (0.61–2.52)	0.52 (0.17–1.64)	2.58 (1.06–6.30)

Low-income countries	Female/girl	≥13 years	Q4	1.22 (0.90–1.67)	1.30 (0.69–2.43)	0.91 (0.50–1.67)	1.28 (0.74–2.23)	0.55 (0.14–2.23)
			Q3	1.41 (1.12–1.79)	2.33 (1.58–3.44)	1.32 (0.88–1.98)	1.15 (0.72–1.84)	0.89 (0.37–2.15)
			Q2	1.59 (1.38–1.84)	2.04 (1.57–2.65)	1.64 (1.30–2.06)	1.45 (1.11–1.90)	0.91 (0.53–1.58)
			Q1	1.49 (1.35–1.66)	1.74 (1.42–2.13)	1.47 (1.23–1.74)	1.49 (1.24–1.80)	1.06 (0.74–1.53)
			Q5	1.26 (0.94–1.67)	1.18 (0.63–2.22)	1.26 (0.78–2.02)	1.44 (0.87–2.38)	0.48 (0.12–1.94)
		Q4	1.53 (1.18–1.98)	1.25 (0.68–2.27)	1.14 (0.70–1.85)	1.73 (1.10–2.72)	1.88 (0.93–3.79)	
		Q3	1.06 (0.81–1.39)	1.52 (0.92–2.51)	0.59 (0.32–1.07)	1.96 (1.33–2.90)	0.19 (0.03–1.36)	
		Q2	1.11 (0.94–1.32)	1.22 (0.85–1.73)	0.90 (0.66–1.23)	1.20 (0.88–1.64)	0.93 (0.53–1.65)	
		Q1	1.13 (0.99–1.28)	1.45 (1.13–1.87)	1.03 (0.82–1.29)	1.45 (1.17–1.81)	0.64 (0.38–1.09)	
		Q5	1.32 (0.99–1.75)	1.20 (0.64–2.26)	0.89 (0.50–1.58)	2.06 (1.33–3.17)	0.76 (0.24–2.36)	
	Q4	1.47 (1.19–1.82)	1.76 (1.17–2.66)	1.58 (1.12–2.22)	2.02 (1.44–2.84)	0.60 (0.23–1.62)		
	Q3	1.36 (1.14–1.63)	1.29 (0.88–1.90)	1.16 (0.84–1.59)	1.80 (1.35–2.41)	0.40 (0.15–1.06)		
	Q2	1.39 (1.24–1.56)	1.77 (1.42–2.19)	1.25 (1.03–1.53)	1.76 (1.46–2.13)	1.35 (0.96–1.92)		
	Q1	1.48 (1.36–1.61)	1.64 (1.39–1.94)	1.27 (1.09–1.47)	2.00 (1.74–2.28)	1.08 (0.81–1.45)		
	Q5	1.78 (1.26–2.53)	1.08 (0.45–2.64)	2.57 (1.58–4.17)	1.15 (0.54–2.45)	0.92 (0.23–3.71)		
	Q4	1.57 (1.24–1.99)	1.11 (0.62–1.97)	1.50 (1.01–2.24)	1.63 (1.07–2.49)	1.17 (0.52–2.62)		
	Q3	1.75 (1.48–2.07)	2.36 (1.74–3.19)	1.97 (1.52–2.55)	1.89 (1.41–2.53)	0.84 (0.42–1.69)		
	Q2	1.49 (1.35–1.65)	1.53 (1.24–1.89)	1.41 (1.19–1.67)	1.69 (1.42–2.02)	0.84 (0.56–1.25)		
	Q1	1.65 (1.54–1.77)	1.72 (1.50–1.98)	1.26 (1.12–1.43)	2.37 (2.12–2.63)	1.24 (0.99–1.56)		
	Male/boy	≥13 years	Q5	1.35 (1.03–1.77)	1.36 (0.77–2.43)	1.28 (0.81–2.03)	1.83 (1.18–2.84)	0.93 (0.35–2.50)
Q4			1.71 (1.34–2.19)	2.14 (1.35–3.39)	1.44 (0.93–2.21)	2.59 (1.79–3.76)	2.29 (1.22–4.30)	
Q3			1.78 (1.43–2.21)	2.18 (1.45–3.29)	2.25 (1.64–3.09)	1.77 (1.19–2.63)	0.36 (0.09–1.45)	
Q2			1.66 (1.44–1.91)	2.26 (1.75–2.91)	1.65 (1.32–2.07)	1.44 (1.10–1.89)	0.77 (0.43–1.40)	
Q1			1.55 (1.39–1.73)	2.02 (1.64–2.49)	1.48 (1.23–1.78)	1.64 (1.34–2.00)	1.34 (0.94–1.91)	

10–12 years	Q5	1.94 (1.50–2.50)	1.71 (1.00–2.93)	2.36 (1.62–3.43)	1.58 (0.97–2.57)	1.02 (0.38–2.75)
	Q4	1.93 (1.59–2.33)	2.68 (1.93–3.73)	1.59 (1.14–2.21)	2.01 (1.45–2.80)	1.30 (0.67–2.51)
	Q3	1.71 (1.46–2.01)	2.32 (1.74–3.11)	1.91 (1.48–2.45)	1.86 (1.40–2.46)	0.48 (0.20–1.16)
	Q2	1.84 (1.66–2.04)	2.19 (1.80–2.66)	1.69 (1.42–2.00)	2.09 (1.76–2.49)	0.92 (0.61–1.39)
	Q1	1.71 (1.58–1.85)	2.27 (1.98–2.61)	1.55 (1.37–1.77)	2.07 (1.83–2.36)	0.91 (0.67–1.23)
≤9 years	Q5	2.13 (1.55–2.93)	1.61 (0.79–3.26)	2.48 (1.55–3.97)	2.35 (1.39–3.97)	2.13 (0.88–5.19)
	Q4	2.15 (1.74–2.66)	2.06 (1.34–3.16)	2.31 (1.67–3.20)	2.37 (1.66–3.38)	3.13 (1.89–5.16)
	Q3	2.35 (2.02–2.72)	3.39 (2.64–4.36)	1.92 (1.49–2.47)	2.74 (2.15–3.49)	1.70 (1.05–2.75)
	Q2	1.87 (1.71–2.05)	2.17 (1.81–2.59)	1.84 (1.59–2.14)	2.16 (1.84–2.52)	1.19 (0.86–1.66)
	Q1	2.03 (1.91–2.16)	2.23 (1.98–2.51)	1.77 (1.59–1.96)	2.65 (2.40–2.92)	1.16 (0.93–1.46)
Year of birth		0.97 (0.97–0.98)	0.96 (0.96–0.96)	0.99 (0.99–1.00)	0.96 (0.96–0.96)	0.98 (0.97–0.98)
Per year						
AUC		0.56 (0.56–0.56)	0.59 (0.59–0.59)	0.55 (0.55–0.56)	0.57 (0.57–0.57)	0.56 (0.56–0.57)
ΔAUC*		<0.01	<0.01	<0.01	<0.01	<0.01

Analyses excluded children with missing data (n=42 842), leaving 1 785 588 children. The analyses included 249 644 overall infectious hospitalisations, 59 928 upper respiratory hospitalisations, 73 465 lower respiratory hospitalisations, 62 985 enteric hospitalisations, 18 750 genitourinary hospitalisations and 71 673 other infectious disease hospitalisations.

*AUC model with an intersectional strata variable with maternal migration status categorised as non-immigrant, other high-income countries, upper-middle-income countries, lower-middle-income countries and low-income countries compared to AUC model with maternal migration categorised as non-immigrant and immigrant.

OR, odds ratio; CI confidence interval; AUC, area under the receiver operating characteristic curve; ΔAUC, incremental change in AUC.