

SUPPLEMENTAL INFORMATION

Passing the Test

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FIGURES

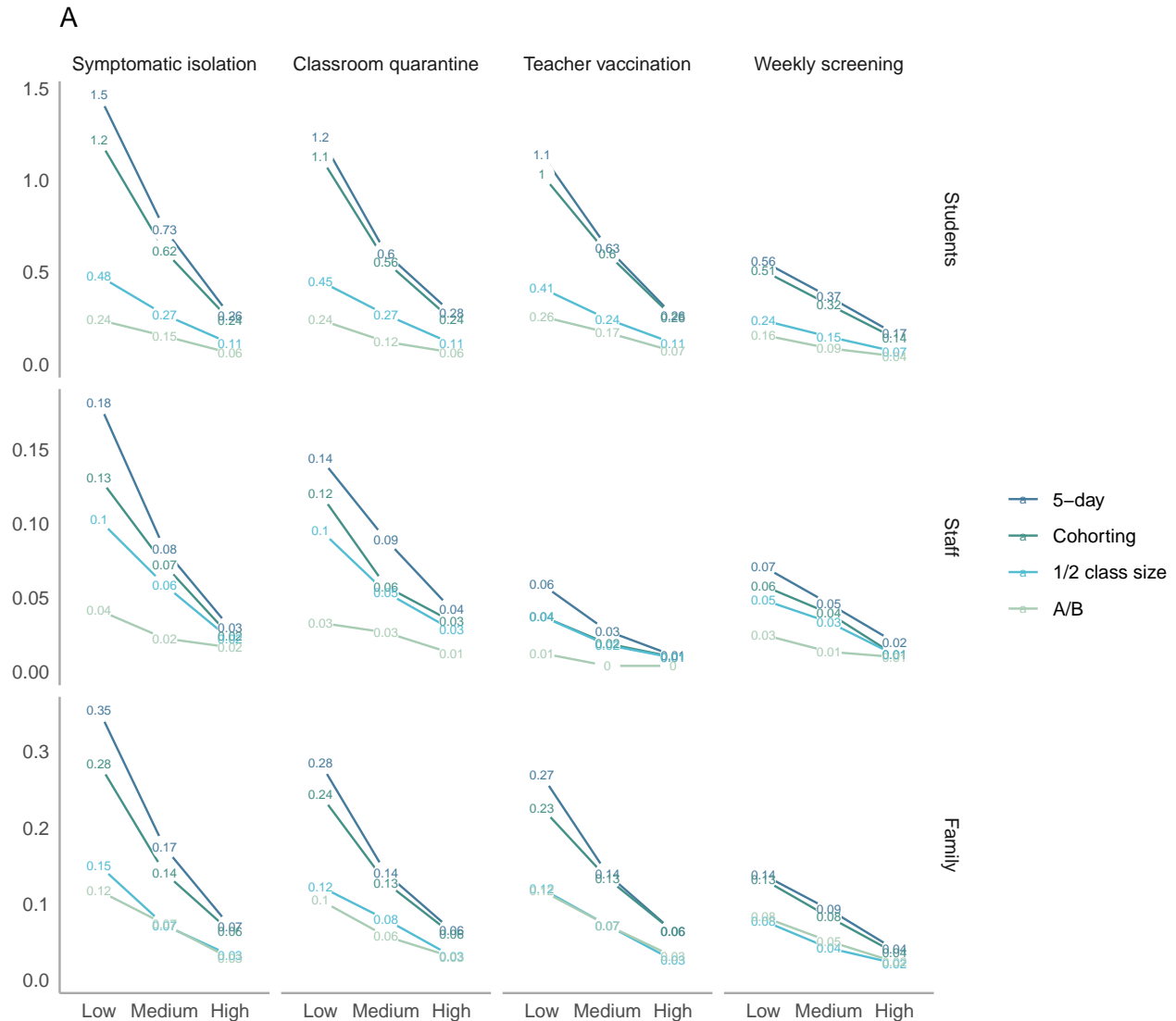


Figure S1: Sensitivity analysis - elementary schools by case type. Average number of total secondary transmissions over 30 days (outside of the index case's household) following a single introduction into an elementary school community. These include both transmission directly from the index case, as well as from secondary and tertiary cases. The x-axis varies the level of prevention measure uptake, with low uptake assuming minimal interventions and high uptake assuming intensive interventions. Line colors correspond to scheduling strategies.

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²Data and code are available on GitHub (link).

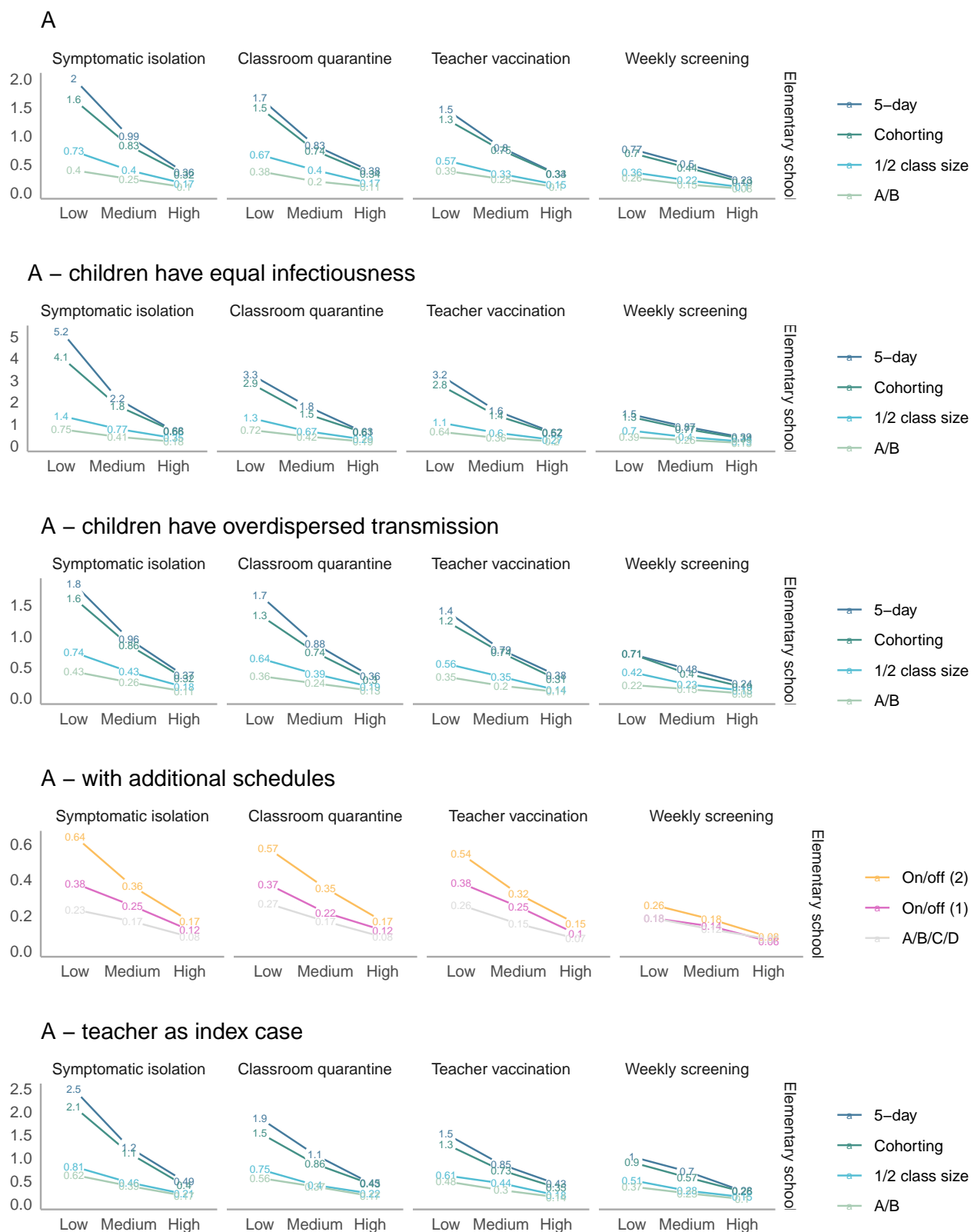
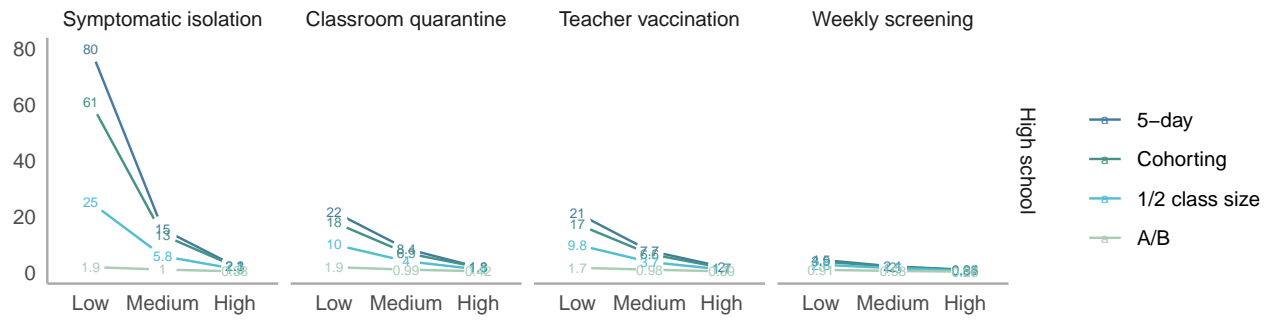
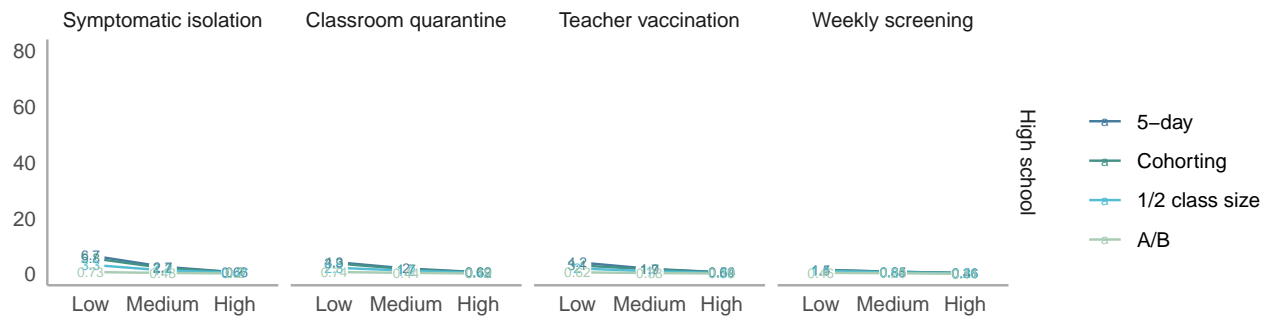


Figure S2: Sensitivity analyses (elementary schools) – average number of total secondary transmissions over 30 days (outside of the index case's household) following a single introduction to a school community. The columns vary the level of prevention measure uptake, with low uptake assuming minimal interventions and high uptake assuming intensive interventions. Line colors correspond to scheduling strategies.

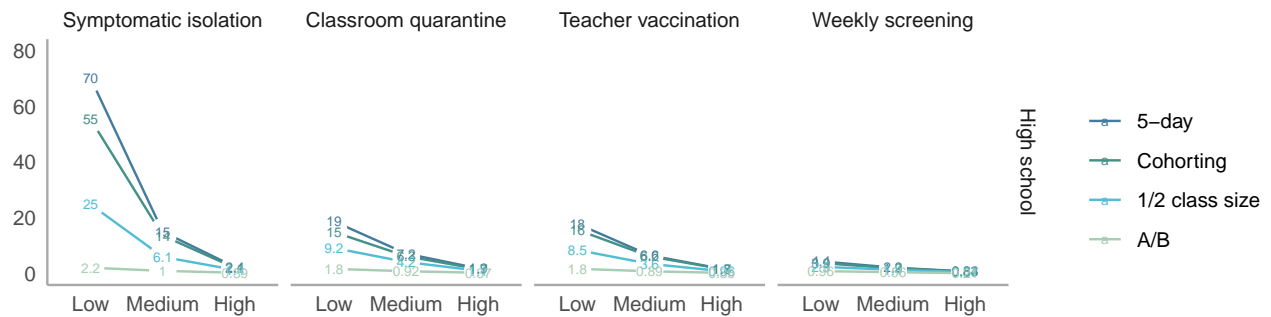
B



B – adolescents less susceptible



B – adolescents have overdispersed transmission



B – with different schedules

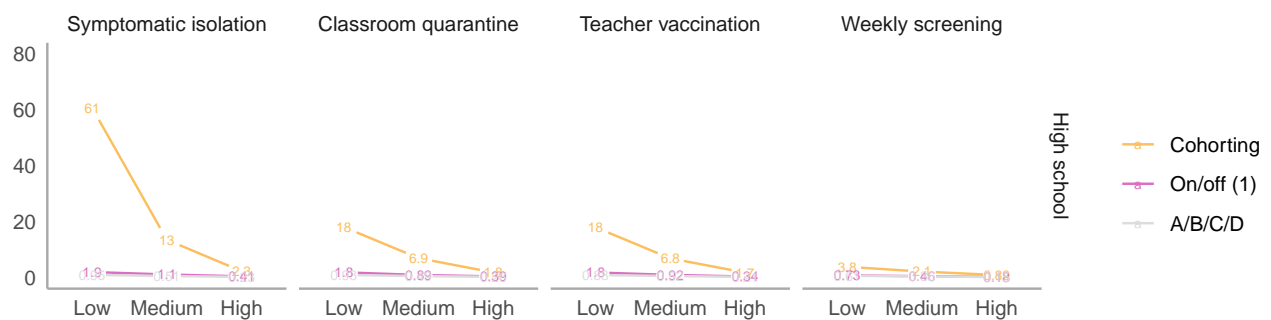


Figure S3: Sensitivity analyses (elementary schools) – average number of total secondary transmissions over 30 days (outside of the index case's household) following a single introduction into a school community. The columns vary the level of prevention measure uptake, with low uptake assuming minimal interventions and high uptake assuming intensive interventions. Line colors correspond to scheduling strategies.

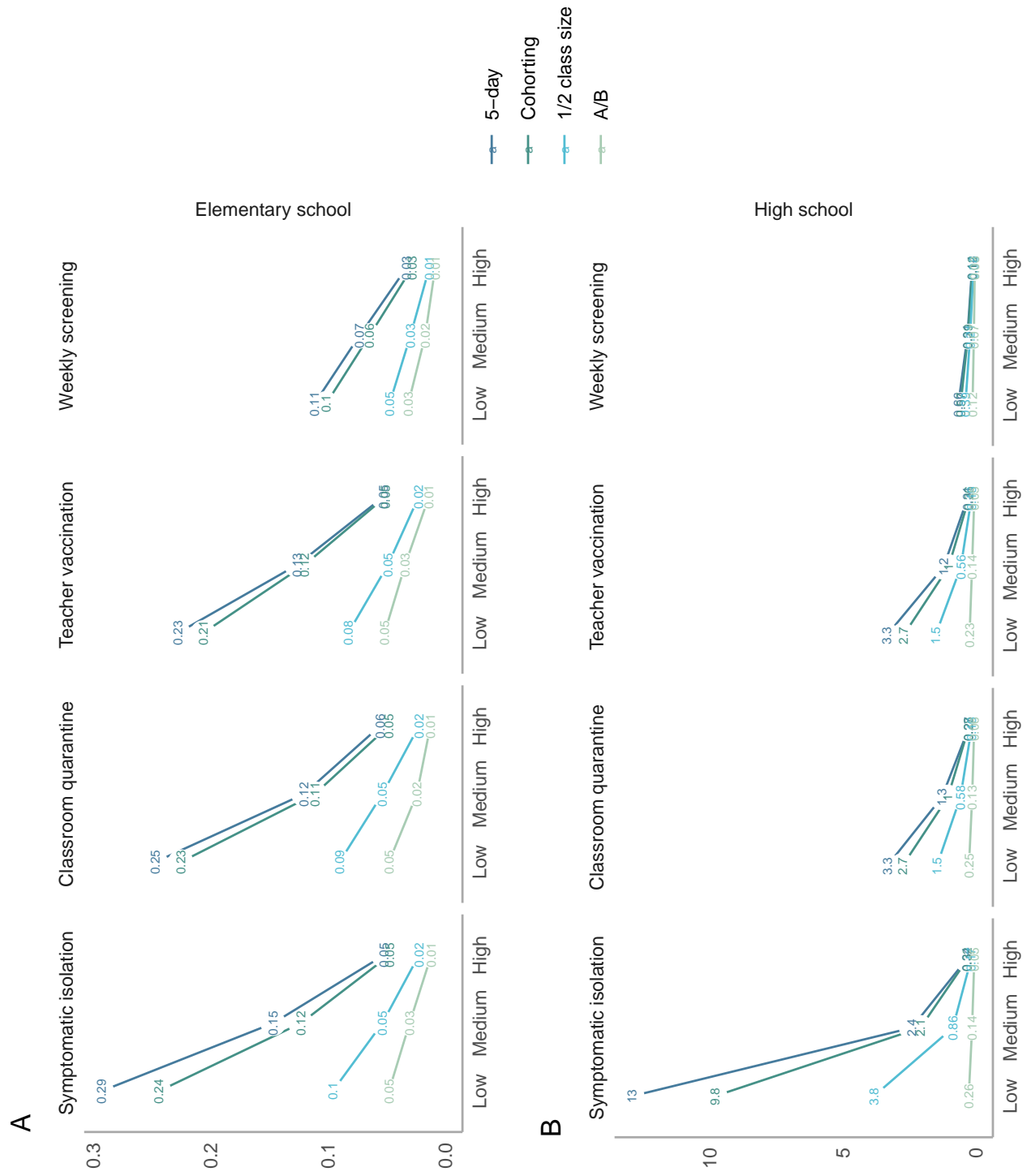


Figure S4: Average number of clinically symptomatic cases in staff and students over 30 days following a single introduction into a school community. These include both transmission directly from the index case, as well as from secondary and tertiary cases. The top panel shows elementary schools, where children are assumed to be less susceptible and less infectious, while the bottom panel shows high schools. Note that axes differ across rows. The x-axes varies the level of prevention measure uptake, with low uptake assuming minimal interventions and high uptake assuming intensive interventions. Line colors correspond to scheduling strategies.

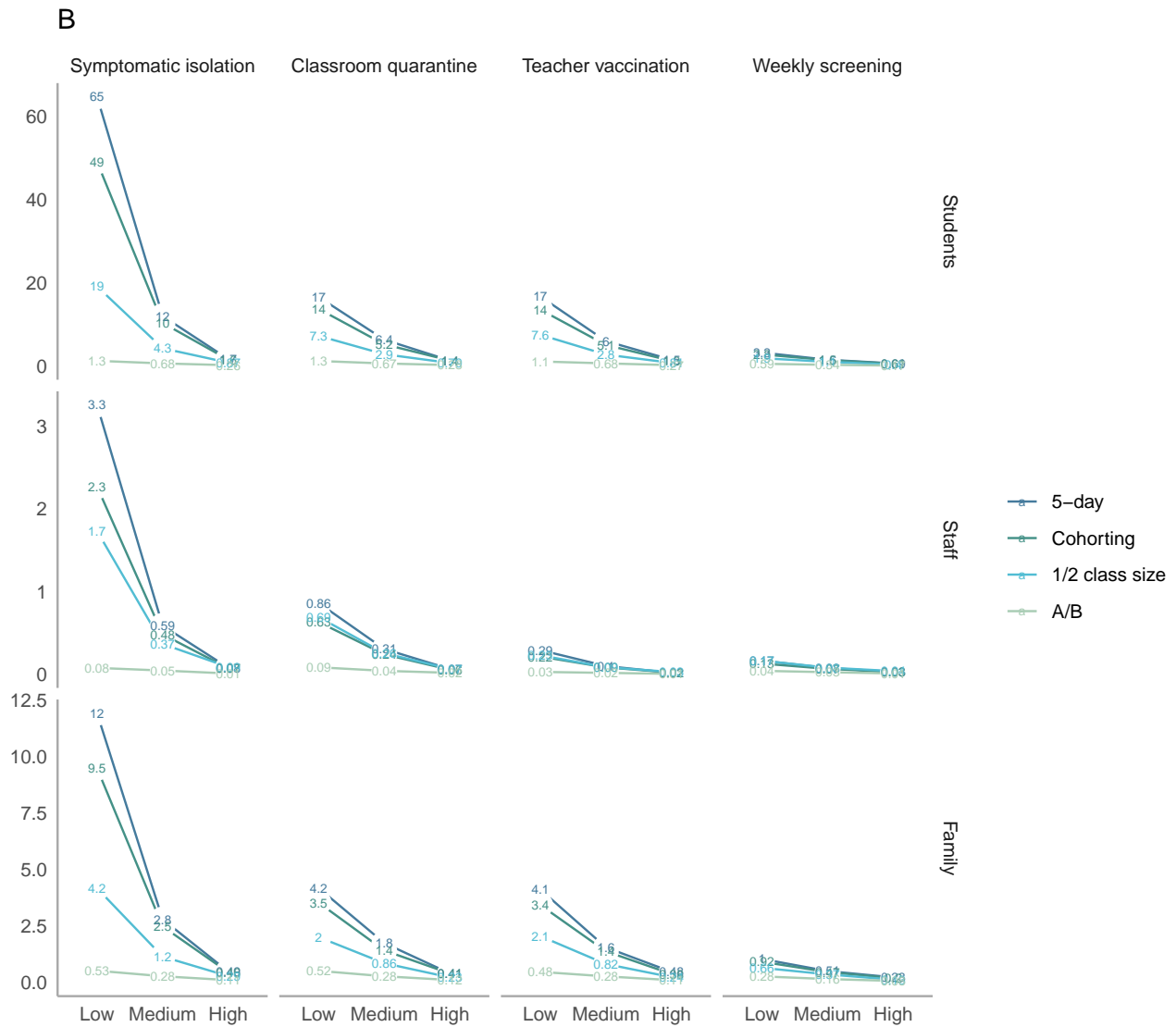


Figure S5: Sensitivity analysis - high schools by case type. Average number of total secondary transmissions over 30 days (outside of the index case's household) following a single introduction into an elementary school community. These include both transmission directly from the index case, as well as from secondary and tertiary cases. The x-axis varies the level of prevention measure uptake, with low uptake assuming minimal interventions and high uptake assuming intensive interventions. Line colors correspond to scheduling strategies.

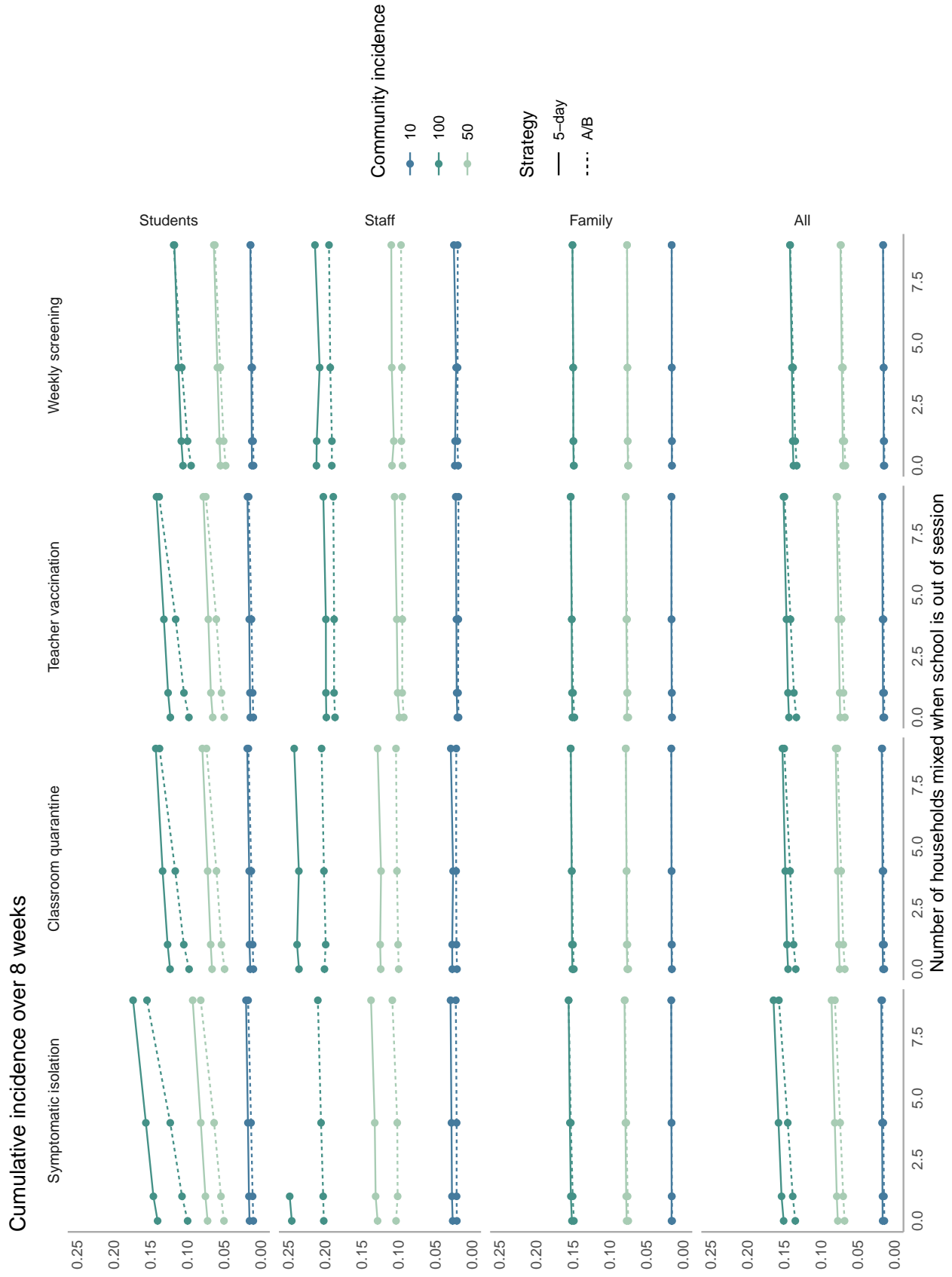


Figure S6: Cumulative incidence over 8 weeks in elementary schools across different levels of out-of-school mixing. The x-axis shows the average daily community incidence per 100,000 population. The y-axis shows cumulative incidence over 8 weeks. Columns denote different isolation, quarantine, and detection strategies, while rows show different population subgroups.

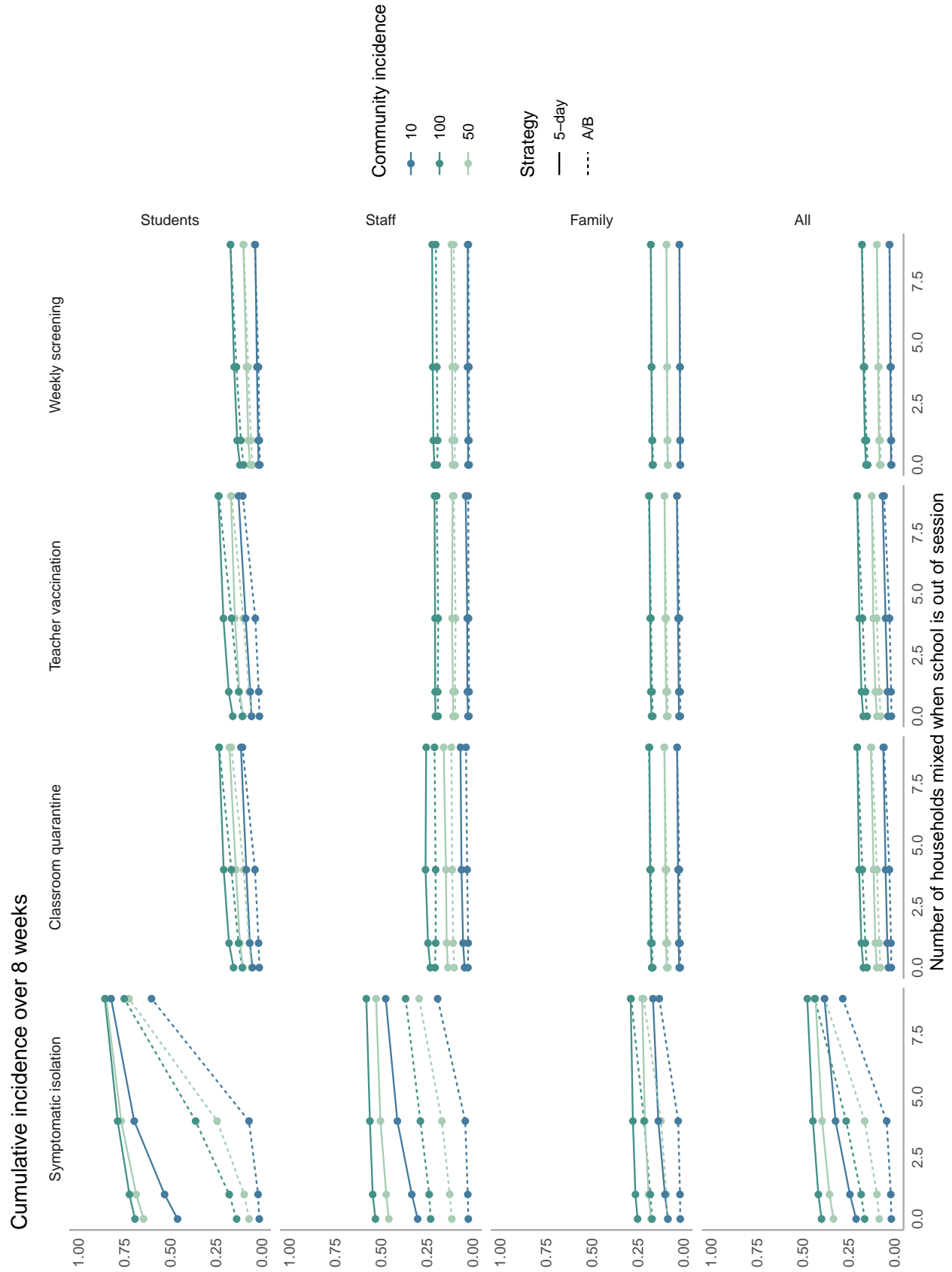


Figure S7: Cumulative incidence over 8 weeks in high schools across different levels of out-of-school mixing. The x-axis shows the average daily community incidence per 100,000 population. The y-axis shows cumulative incidence over 8 weeks. Columns denote different isolation, quarantine, and detection strategies, while rows show different population subgroups.

MODEL

We use a Framework for Reconstructing Epidemiological Dynamics (FRED) to generate household structures (Wheaton 2014). For computational simplicity, we used Maryland as a representative state, as sibling structure (the main parameter of interest) did not appear sensitive to location.

Maryland Elementary

Fraction of households with a child of age 1 containing a child of age 2

Age 2	10	0.08	0.12	0.12	0.14	0.06	1
	9	0.09	0.12	0.14	0.05	1	0.05
	8	0.11	0.13	0.05	1	0.05	0.13
	7	0.13	0.06	1	0.05	0.14	0.12
	6	0.05	1	0.06	0.13	0.11	0.11
	5	1	0.05	0.12	0.11	0.08	0.07
		5	6	7	8	9	10
		Age 1					

Connecticut Elementary

Fraction of households with a child of age 1 containing a child of age 2

Age 2	10	0.07	0.11	0.14	0.17	0.04	1
	9	0.1	0.12	0.15	0.05	1	0.04
	8	0.14	0.15	0.06	1	0.04	0.16
	7	0.15	0.07	1	0.07	0.15	0.13
	6	0.07	1	0.06	0.15	0.12	0.09
	5	1	0.07	0.14	0.13	0.09	0.06
		5	6	7	8	9	10
		Age 1					

Mississippi Elementary

Fraction of households with a child of age 1 containing a child of age 2

Age 2	10	0.1	0.1	0.12	0.12	0.07	1
	9	0.12	0.15	0.12	0.08	1	0.07
	8	0.12	0.11	0.07	1	0.07	0.12
	7	0.14	0.08	1	0.07	0.11	0.12
	6	0.08	1	0.09	0.11	0.14	0.1
	5	1	0.08	0.14	0.12	0.11	0.1
		5	6	7	8	9	10
		Age 1					

Texas Elementary

Fraction of households with a child of age 1 containing a child of age 2

Age 2	10	0.09	0.11	0.13	0.15	0.08	1
	9	0.12	0.14	0.14	0.06	1	0.08
	8	0.14	0.15	0.07	1	0.06	0.15
	7	0.15	0.09	1	0.07	0.14	0.13
	6	0.07	1	0.09	0.15	0.14	0.11
	5	1	0.07	0.15	0.14	0.12	0.09
		5	6	7	8	9	10
		Age 1					

Maryland HS

Fraction of households with a child of age 1 containing a child of age 2

Age 2	17	0.13	0.14	0.08	1
	16	0.14	0.06	1	0.08
	15	0.06	1	0.06	0.14
	14	1	0.05	0.12	0.12
		14	15	16	17
		Age 1			

Connecticut HS

Fraction of households with a child of age 1 containing a child of age 2

Age 2	17	0.13	0.14	0.07	1
	16	0.14	0.06	1	0.07
	15	0.06	1	0.06	0.14
	14	1	0.06	0.13	0.13
		14	15	16	17
		Age 1			

Mississippi HS

Fraction of households with a child of age 1 containing a child of age 2

Age 2	17	0.1	0.14	0.09	1
	16	0.14	0.1	1	0.09
	15	0.08	1	0.1	0.13
	14	1	0.08	0.13	0.1
		14	15	16	17
		Age 1			

Texas HS

Fraction of households with a child of age 1 containing a child of age 2

Age 2	17	0.13	0.14	0.08	1
	16	0.16	0.08	1	0.08
	15	0.08	1	0.08	0.14
	14	1	0.08	0.17	0.13
		14	15	16	17
		Age 1			

REFERENCES

Wheaton, W. D. 2014. "U.S. Synthetic Population 2010 Version 1.0 Quick Start Guide, RTI International."