







# COVID-19 and Children's Surveillance Report

Number 5

Compiled: 10 January 2022









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## **Overview**

- This weekly summary documents the latest COVID-19 surveillance data in children and adolescents, with a focus on Victoria and New South Wales (NSW) as well as specific countries that are relevant to the Australian context because of their size, COVID-19 epidemiology, the mitigation measures in place and data availability.
- Data on Multisystem Inflammatory Syndrome in Children (MIS-C), otherwise known as Paediatric Inflammatory Multisystem Syndrome (PIMS-TS), is also searched for but is not always available.
- This report is updated weekly using the most recently available data from government websites.
- Surveillance data for the Omicron variant of concern is included where available, including for NSW, South Africa, Denmark and the United Kingdom.
- The number of infections in unvaccinated children may also increase if school mitigation measures are few, or there are changes to testing criteria and the adoption of screening in schools. The number of cases will be biased towards the age groups that are tested most.





## **Summary**

- Throughout 2021, the proportion of infections in unvaccinated children has generally increased as vaccination of adults has increased. 1,2 This proportion may continue to increase in countries where a low proportion of children are vaccinated. Many countries are now vaccinating adolescents and several other countries, including Australia and the USA, have begun vaccinating children aged 5 years and over.
- With the predominance of Omicron in many settings and with vaccines having low effectiveness against infection, the age distribution of infection has changed again. Early reports from NSW, the UK and Denmark, regions which have intensive surveillance, indicate that transmission mainly occurs in 20-29 year olds for now, with children and adolescents less affected. However, some settings have had lockdowns and closed schools and other settings have only just started to open schools again, so these mobility changes may also change the age distribution over time.
- COVID-19 epidemiology in children and adolescents varies by setting.
- Following the return to school in September 2021, many settings with high vaccination coverage and school mitigation measures have had few infections and outbreaks. Other settings with low coverage in all ages, including adolescents, and/or few mitigation measures have experienced an increase in case numbers in children, and school outbreaks.
- Many schools were closed for the end-of-year holidays and some have reopened in early January 2022.
- The Omicron variant of concern<sup>3</sup> was first reported from South Africa on 25 November 2021. At the time of writing, it has been detected in 101 countries<sup>4</sup>, up from 94 countries in the last report. Omicron is now the predominant variant in Australia, South Africa, the UK, USA and many other countries already due to its high transmissibility.
- There has been an increase in paediatric hospitalisations but this has been a combination of admission for COVID-19 treatment and incidentally testing positive when admitted for an unrelated condition. In New York State, for children aged 0-4 years, COVID-19 hospitalisations have increased from 0.4 to 4 per 100,000 children during the Omicron wave. For children aged 5-11 this has increased from 0.2 to 0.8 per 100,000, and for adolescents aged 12-18 years this has increased from 0.1 to 1.5 per 100,000. 56% of admitted children had comorbidities, highlighting the need that adolescents with immune-compromising conditions should get their third dose and primary school age children get vaccinated as soon as possible. Importantly, 36-47% of children were admitted not for the treatment of COVID-19 but for other conditions and incidentally tested positive for COVID-19 due to high prevalence in the community. Nevertheless, being a COVID-19 positive patient presents its own health care and workforce challenges.
- While paediatric infections and hospitalisations are rising in the US, the outcomes appear to be milder with Omicron compared to Delta. Early data from the US also suggests that Omicron is less severe in children compared with Delta, with children 70-80% less likely to attend an emergency department for care and about 50-60% less likely to be hospitalised for treatment.
- An analysis of COVID-19 in children <16 years in New South Wales (NSW) during the 2021 Delta wave found that 22% were asymptomatic and 3.8% required hospital admission. Among those hospitalised. 36% were admitted due to medical need while 64% were admitted for social reasons, and hospitalisations were more common in children aged <2 years. Less than 0.1% of cases required ICU admission, which were more common in children aged 12-15 years. MIS-C occurred in 0.04% of cases. There was one child death associated with COVID-19.







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<sup>6</sup> New York State Department of Health. Pediatric COVID-19 Update 07 January 2022. New York, US: New York State Department of Health; 2022. https://www.health.ny.gov/press/releases/2022/docs/pediatric\_covid-19\_hospitalization\_report\_summany.pdf
7 Wang L, Berger NA, Kaelber DC, Davis PB, Volkow ND, Xu R. Comparison of outcomes from COVID infection in pediatric and adult patients before and after the emergence of Omicron. medRxiv [preprint]. 2022;21268495. https://doi.org/10.1101/2021.12.30.21268495

<sup>\*</sup> Williams P, Koirala A, Saravanos G, et al. COVID-19 in children in NSW, Australia, during the 2021 Delta outbreak: severity and disease spectrum. medRxiv [preprint]. 2021. https://doi.org/10.1101/2021.12.27.21268348

- Up until school holidays and before the predominance of the Omicron variant, infections appear to be stable in children and adolescents in **Victoria** and declined in **NSW** with the return of face-to-face learning despite many school infections. This could be attributable to high vaccine coverage in ≥12 year olds and implementation of mitigation measures in schools including test, trace, isolate and quarantine (TTIQ).
- Victoria opened all schools for onsite fulltime schooling on 1 November before closing for the holidays from 18 December 2021.
  - o Density limits have been reintroduced with work from home default, indoor mask wearing is required for all aged 8 years and older.
  - o Approximately 88% of 12-15 year olds have received at least one dose of a COVID-19 vaccine. Children aged 5-11 years became eligible for vaccination from 10 January 2022, two doses given eight weeks apart.
  - There is currently a steep increase in infections, with now ~39,000 confirmed cases per day in all ages.
    - Omicron is now the dominant variant in Victoria, detected in ~76% of samples collected in late December 2021.
    - Infections are highest in the 20-29 year and followed by the 30-39 year, increasing in the 10-19 year and low in the 0-9 year age groups.
    - Testing capacity has been constrained in all ages due to increased demand. Since 8 January 2022, Victorian daily case numbers include both PCR and rapid antigen test (RAT) positive results.
  - There is no hospitalisation data available by age, but total numbers for all age groups have increased in recent weeks.
  - Two children have lost their lives with COVID-19 throughout the entire pandemic.
- NSW commenced onsite fulltime schooling on 8 November before closing for the holidays from 18 December 2021.
  - o Indoor mask wearing is required for all aged 12 years and older.
  - Approximately 82% of 12-15 year olds have received at least one dose of vaccine. Children aged 5-11 years are now eligible for vaccination.
  - Case numbers have increased to ~41,000 confirmed cases per day in all ages.
    - Omicron is now the dominant variant in NSW.
    - Infections are highest in the 16-39 year and lowest in the 0-9 year age group.
  - There is no data on hospitalisation trends by age, but overall hospitalisations have increased in recent weeks.
    - From June to December 2021, 11 children aged 0-9 years were admitted to ICU, and 33 unvaccinated and 1 fully vaccinated adolescents aged 10-19 years were admitted to ICU.
  - o One child has lost their life with COVID-19 throughout the entire pandemic.
- Canada closed its schools for the holidays in December 2021 which are set to reopen in late January 2022. The Province of Ontario has resumed online learning due to an increase in case numbers.
  - Public Health and Social Measures (PHSM) vary by province. Ontario introduced further restrictions including closure of indoor dining.
  - Approximately 46% of 5-11 year olds and 87% of 12-17 year olds have received at least one dose of vaccine. Since November 2021, all 5-11 year olds have been offered vaccine with an eight week interval between doses.
  - o There is a steep increase in infections in all age groups due to the Omicron variant, which has overtaken the Delta variant.
  - o There is no data on hospitalisation trends by age, but overall hospitalisations have increased in recent weeks.
    - In the Province of British Columbia, rising case rates among children since August 2021 (Delta wave) have not translated to an increase in hospitalisations.
  - o There have been 23 deaths with COVID-19 in children aged 0-19 years throughout the entire pandemic.
- In Europe and North America, cases are on the rise across all age groups in many countries.
- Denmark closed their schools early for the end-of-year holidays which reopened in early January 2022.
  - o Additional PHSM were reintroduced, including a partial lockdown due to a rapid rise in COVID-19 cases due to Omicron.
  - o Approximately 82% of the population aged 12+ have received at least one dose of vaccine. The 5-11 year old vaccination program commenced in late November 2021, with less than 5% of primary school aged children fully vaccinated so far.
  - o Total infection and hospitalisation rates are on a steep upward trend.
    - Omicron is now the predominant variant, causing ~90% of all COVID-19 infections.
    - Children and adolescents continue to have the lowest rate of Omicron infections so far.
    - There is no data on hospitalisation trends by age.
  - There have been three deaths with COVID-19 in children aged 0-19 years throughout the entire pandemic.





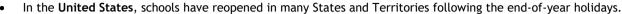


- England has reopened its schools in early January 2022 following the end-of-year holidays.
  - Additional PHSM were reintroduced in late November 2021, including indoor mask wearing, work from home default and proof of vaccination. RAT is available for all twice weekly.
  - Approximately 50% of 12-15 year olds and 65% of 16-17 year olds have received at least one dose of vaccine. Vaccination in 5-11 year olds is recommended for immunocompromised children.
  - o Infections across most age groups are now on a steep upward trajectory.
    - Omicron is now the predominant variant in England.
    - Infections are primarily in the 20-39, followed by the 40-59 year age group.
  - Overall hospitalisations are increasing.
    - There is a steep increase in 0-4 year olds but rates in children remain the lowest compared to all other age groups.
    - Hospitalisations include children who test positive, irrespective of the reason for admission, so is an overestimate of hospitalisations for treatment of COVID-19.
  - o There have been 73 deaths with COVID-19 in children aged 0-19 years in the past year.
- Finland has reopened its schools in early January 2022 following the end-of-year holidays.
  - Additional restrictions were reintroduced in late December 2021, including indoor mask wearing, proof of vaccination, work from home default and density limits. Further restrictions were introduced in January 2022, including limits on household visitors, hospitality opening hours and access to public places.
  - o Approximately 77% of 12-15 year olds and 85% of 16-19 year olds have received at least one dose of vaccine. All children aged 5-11 years are now offered vaccine.
  - There has been a steep increase in infections in all age groups, especially in children aged <15 years.</li>
  - There has been no additional reporting on hospitalisations by age group since 10 December 2021. There are far fewer infections and hospitalisations in the vaccinated compared to the unvaccinated.
  - o There have been no deaths in anyone <30 years old.
- Scotland has reopened its schools in early January 2022 following the end-of-year holidays.
  - o Additional restrictions have been reinstated, including indoor mask wearing, density limits and work from home default.
  - Approximately 65% of 12-15 year olds and 81% of 16-17 year olds have received at least one dose of vaccine. Vaccination in 5-11 year olds is recommended for immunocompromised children.
  - o Infections are rising in all age groups.
    - Omicron predominance is at ~91% of all cases.
    - The 20-39 year age group has the highest rates of infection.
  - Hospitalisations in children are on the rise, primarily in the <1 year age group. Hospitalisations include children who test positive, irrespective of the reason for admission, so is an overestimate of hospitalisations for treatment of COVID-19.</li>
  - o There have been 4 deaths due to COVID-19 in children aged 0-14 years throughout the entire pandemic.
- Singapore has reopened its schools in early January 2022 following the end-of-year holidays.
  - o Restrictions were reintroduced in late September 2021, including indoor and outdoor mask wearing, work from home default and density limits.
  - Approximately 89% of the entire population has received at least one dose of vaccine. All children aged 5-11 years are now offered vaccine.
  - Currently there is an upward trend in overall infections with ~800 cases per day, primarily in the 20-39 year age group.
  - Overall hospitalisations remain stable.
  - o A total of five cases of MIS-C have been reported (up to 8 November 2021), all from the Delta wave in mid-late 2021. There has been one ICU admission due to MIS-C.
  - o There have been no deaths in children throughout the entire pandemic.
- South Africa has reopened its schools in early January 2022 following the end-of-year holidays.
  - Certain restrictions such as the curfew and density limits have been eased since late December 2021.
  - Approximately 45% of the entire population is fully vaccinated.
  - o There was a rapid increase in infections due to Omicron in all age groups but this is now decreasing, with children <19 years having the lowest infection rates.
  - Overall hospitalisations are also now decreasing. However, many admissions were incidental (admitted for other reasons and subsequently test positive).
  - There have been 760 deaths with COVID-19 in children aged 0-19 years throughout the entire pandemic. This accounts for <1% of all COVID-19 deaths in the country.









- o The US Centres for Disease Control and Prevention (CDC) recommend multi-layered PHSM, but adoption varies by State and Territory.
- o Approximately 26% of 5-11 year olds and 64% of 12-17 year olds have received at least one dose of vaccine. Since November 2021, all children aged 5-11 years have been offered vaccine with a three week interval between doses.
- There are large differences in Delta infection and hospitalisation rates (up to four-fold differences) and the number of deaths in children between States and Territories, most likely due to differences in vaccination coverage and adherence to PHSM.
- o There is currently a steep upward trend in infections in most US states, mostly in the 18-39 year age group.
  - An estimated 95% infections were due to Omicron as of 1 January 2022.
- o There is a current increase in hospitalisation rates among children aged 0-4 years, but rates remain stable in other paediatric age groups.
- There have been 694 deaths with COVID-19 in children aged 0-17 years throughout the entire pandemic. This accounts for <0.1% of all COVID-19 deaths in the country.
  - Texas has had the highest number of child deaths (119) and there are six States that have reported 0 deaths throughout the entire pandemic.9
- o A total of 6431 cases of MIS-C have been reported, including 55 deaths.
  - There does not appear to be an increase in MIS-C despite the surge of Omicron cases, but surveillance is ongoing.
- o The State of New York experienced its Omicron surge in the past month<sup>10</sup>.
  - Rates of COVID-19 hospitalisation for children aged 0-4 have increased from 0.4 to 4 per 100,000 during December 2021. For children aged 5-11, the increase has been from 0.2 to 0.8 per 100,000. The increase for adolescents aged 12-18 has been from 0.1 to 1.5 per 100,000. Despite this exponential growth, these rates are very low.
  - 70% of children who contracted COVID-19 and were hospitalised were symptomatic and 54% had no comorbidities.
  - During this period, 12% of 5-11 year olds were fully vaccinated. Most admissions in the 5-11 year age group were unvaccinated (91%) compared to 4% fully vaccinated. The hospitalisation rate was 0.17 per 100,000 amongst those vaccinated vs 0.73 per 100,000 amongst those unvaccinated. There were few admissions in children who had received one or both doses of vaccine.
- Hospitalisations and deaths include all children who test positive, irrespective of the reason for admission or death, so is likely an overestimate of hospitalisations and deaths due to COVID-19.

<sup>10</sup> New York State Department of Health, Pediatric COVID-19 Update 07 January 2022. New York, US: New York State Department of Health; 2022. https://www.health.ny.gov/press/releases/2022/docs/pediatric\_covid-19\_hospitalization\_report\_summany.pdf







American Academy of Pediatrics (AAP). Children and COVID-19: State-Level Data Report 30 December 2021. Illinois, US: AAP; 2021. https://www.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/children-and-covid-19-state-level-data-report/

### Summary of COVID-19 epidemiology in children and adolescents

Country	Cases	Hospitalisations	MIS-C/PIMS-TS	Total deaths^
VIC, Australia	<b>↑</b>	Not available	Not reported	2 <sup>b</sup>
NSW, Australia	<b>↑</b>	<b>^*</b>	Not reported	1 <sup>b</sup>
Canada	<b>↑</b>	<b>^*</b>	Not reported	23 <sup>b</sup>
Denmark	<b>↑</b>	<b>^*</b>	Not reported	3ь
England, UK	<b>↑</b>	Stable	Not reported	73 <sup>b,#</sup>
Finland	<b>↑</b>	<b>^*</b>	Not reported	0
Scotland, UK	<b>↑</b>	<b>^*</b>	Not reported	<b>4</b> a
Singapore	<b>↑</b>	Stable	5 cases	0
South Africa	$\downarrow$	<b>↓*</b>	Not reported	760b
USA	<b>↑</b>	<b>↑</b>	6431 cases	694 <sup>b</sup>

Note: Trends and values are for children only, unless otherwise specified.





<sup>\*</sup>Available data includes both children and adults.

<sup>^</sup>Age range for child deaths between 0-19y except Scotland (0-14y) and USA (0-17y). Deaths °due to COVID-19 or bwith COVID-19. #In the past year.



Abbreviation	Term
MIS-C	Multisystem inflammatory syndrome in children
NSW	New South Wales, Australia
PCR	Polymerase chain reaction
PHSM	Public health & social measures
PIMS-TS	Paediatric inflammatory multisystem syndrome
RAT	Rapid antigen testing
TTIQ	Test, trace, isolate, quarantine





## Australia: Victoria

(population 6.6 million)

PHSM <sup>11</sup>	Schools & mitigation 12		Vaccination	coverage 13,14		
Indoor mask-wearing required for all aged 8+, all shops open, TTIQ, QR check-in, proof of vaccination to attend some premises.  From 6 Jan 2022, density limits reintroduced and work from home default.  From 8 Jan 2022, a positive RAT result is reported as a "probable" COVID-19 case (treated as a PCR positive case and reported in daily case numbers).	All students returned to onsite fulltime schooling from 1 Nov and all closed for holidays from 18 Dec 2021.  Standard PHSM, staggered return, cohorting, masks in primary & secondary, mandatory vaccination for staff from 18 Oct, RAT available		available to all e	1st dose (%) 87.8 93.9 - nmunocompromised a eligible adults aged 1 5-11y available from	8y+. Coverage data r	3 <sup>rd</sup> /booster (%) 17.0 Oct 2021, booster dose not available.
Infections by age group <sup>15,16</sup>	Hospitalisations in children 17		Deaths by ag	ge group <sup>18</sup>		
Daily new cases (up to 08/01/2021)  10000		<b>58</b> cases in ICU	People who have po 19 09/01/2022	assed away with COVID-	Especia	Tabl
8000			Age group	Male	Pemale 1	Total
—20	-29		10-19	0	1	1
8 6000 − − 30· − 40·			20-29	2	1	3
4000 ——50-			30-39	5	0	5
2000			40-49	13	6	19
2000 — 30-			50-59	40	23	63
90-			60-69	81	44	125
25-5-18 11-78-18 11-7	ant		70-79	214	125	339
2020 2021 2022			80-89	315	270	585
From 8 Jan 2022, daily numbers include both PCR and RAT positive cases.			90+	170	267	437
			Total	840		







<sup>11</sup> https://www.coronavirus.vic.gov.au/coronavirus-covidsafe-settings
12 https://www.coronavirus.vic.gov.au/education-information-about-coronavirus-covid-19
13 https://www.health.gov.au/resources/collections/covid-19-vaccination-daily-rollout-update
14 https://twitter.com/VicGovOH
15 Data from: https://www.coronavirus.vic.gov.au/victorian-coronavirus-covid-19-data
16 https://www.health.vic.gov.au/media-releases/coronavirus-update-for-victoria-3-january-2022
17 https://www.coronavirus.vic.gov.au/victorian-coronavirus-covid-19-data
18 https://www.coronavirus.vic.gov.au/victorian-coronavirus-covid-19-data

https://www.coronavirus.vic.gov.au/additional-covid-19-case-data#cases-in-hospital

## **Australia: New South Wales**

(population 8.2 million)

#### PHSM<sup>19</sup>

Mandatory masks indoors and on public transport for all aged 12+, TTIQ, QR check-in, all shops open, proof of vaccination to attend some premises.

### Schools & mitigation 20,21

All students returned to onsite fulltime schooling from 8 Nov and all closed for holidays from 18 Dec 2021.

Standard PHSM, RAT home testing for educational contacts.

Mandatory vaccination for staff from 8 Nov 2021.

### Vaccination coverage 22

Age group (years)	1st dose (%)	2 <sup>nd</sup> dose (%)
12-15	81.5	78.1
16+	95.1	93.7

Third dose for immunocompromised available from early Oct 2021, booster dose available to all eligible adults aged 18y+. Coverage data not available. Vaccination for 5-11y available from 10 Jan 2022.

### Infections by age group 23

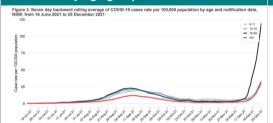


Table 4. Demographics of confirmed and probable Omicron infections, Delta infections, and infections with genomic sequencing under investigation by gender, age, vaccination status and clinical severity, NSW, 26 November to 25 Decembe 2021

	Confirmed Omicron Cases	Probable Omicron Cases*	Confirmed Delta Cases	Not Sequenced
Gender				
Female	564 (51.0%)	1,473 (50.4%)	1,205 (47.4%)	23,618 (49.3%
Male	540 (48.9%)	1,443 (49.3%)	1,330 (52.4%)	24,236 (50.5%
Not stated	1 (0.1%)	9 (0.3%)	5 (0.2%)	95 (0.2%
Age group*				
0-9	26 (2.4%)	82 (2.8%)	371 14.6%)	2,982 (6.2%
10-19	203 (18.4%)	516 (17.6%)	457 (18.0%)	7,219 (15.1%
20-29	567 (51.3%)	1,447 (49.5%)	575 (22.6%)	17,295 (36.1%
30-39	136 (12.3%)	442 (15.1%)	397 (15.6%)	9,026 (18.8%
40-49	83 (7.5%)	202 (6.9%)	314 (12.4%)	4,981 (10.4%
50-59	54 (4.9%)	145 (5.0%)	186 (7.3%)	3,517 (7.3%
60-69	16 (1.4%)	56 (1.9%)	127 (5.0%)	1,795 (3.7%
70-79	14 (1.3%)	21 (0.7%)	77 (3.0%)	762 (1.6%
80-89	4 (0.4%)	12 (0.4%)	31 (1.2%)	298 (0.6%
90+	2 (0.2%)	1 (<0.1%)	5 (0.2%)	71 (0.1%
Vaccination status				
Fully vaccinated	879 (79.5%)	2,344 (80.1%)	1,234 (48.6%)	33,796 (70.5%
Partially vaccinated	12 (1.1%)	12 (0.4%)	43 (1.7%)	444 (0.9%
No effective dose	154 (13.9%)	308 (10.5%)	703 (27.7%)	4,489 (9.4%
Under investigation®	29 (2.6%)	165 (5.6%)	37 (1.5%)	5,321 (11.1%
Not eligible (aged 0-11 years)	31 (2.8%)	96 (3.3%)	523 (20.6%)	3,899 (8.1%
Clinical severity				
Hospitalised	17 (1.5%)	16 (0.5%)	101 (4.0%)	620 (1.3%
ICU	1 (0.1%)	0 (0.0%)	1 (<0.1%)	2 (<0.1%
Deaths	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%
Total	1,105 (100%)	2,925 (100%)	2,540 (100%)	47,949 (100%

\*Close not include people with no brith date recorded \*Vaccination status is updated regularly using both the Australian Immunisation Register and the patient's interview. \*Probable Omicron cases are confirmed cases that are yet to have genomic sequencing but have PCR results that show an S gene dropout, a featur caused by a mutation in the Omicron variant. Following genomic sequencing, these cases will be reported with their confirmed variant.

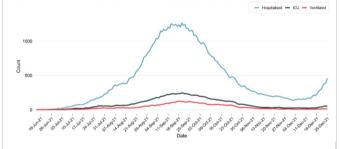
#### Hospitalisations in children<sup>24</sup>

Hospitalisations among people diagnosed with COVID-19, by age group, NSW

Age-group (years)	Hospitalised	Percentage of cases hospitalised*	Hospitalised per 100,000 population	Hospitalised	Percentage of cases hospitalised*
0-9	303	2%	30.0	4	2%
10-19	387	2%	40.1	10	3%
20-29	1,050	5%	89.6	27	2%
30-39	1,319	8%	112.7	46	4%
40-49	1,357	12%	131.4	48	7%
50-59	1,333	16%	137.1	78	11%
60-69	1,106	23%	131.6	117	18%
70-79	843	36%	144.7	92	23%
80-89	562	49%	204.9	52	43%
90+	143	51%	206.2	16	38%
Total	8,403	8%	103.9	490	9%
There is often a delay he	tween a nerson becom	ning ill with COVID-19 ar	nd subsequently requiring a ho	snitalisation or dving	Since 16 June 2021

\* There is often a delay between a person becoming ill with COVID-19 and subsequently requiring a hospitalisation or dying. Since 16 June 2021, the median time between onset and hospitalisation is 6 days and between onset and death is 11 days. Therefore hospitalisations and deaths are under-received for the median called leave.

Figure 5b. Number of cases in hospital, in ICU and ventilated by date, NSW, from 16 June to 25 December 2021



Many admissions in <12y children are for social reasons as parents are hospitalised for treatment of COVID-19. -1% of primary school age cases are admitted for treatment of COVID-19. Graph is not available by age group.

### Deaths by age group<sup>25</sup>

Table 6. Deaths following recent infection with COVID-19, by age group, from January 2020 to 25 December 2021

		Since 16 Jun 202	Jan 2020 -	- 15 Jun 2021	
Age-group (years)	Number of deaths	Case fatality rate	Fatality rate per 100,000 population <sup>1</sup>	Number of deaths	Case fatality rate <sup>2</sup>
0-9	0	0%	0.0	0	0%
10-19	1	<1%	0.1	0	0%
20-29	6	<1%	0.5	0	0%
30-39	15	<1%	1.3	0	0%
40-49	28	<1%	2.7	0	0%
50-59	66	1%	6.8	1	<1%
60-69	105	2%	12.5	4	1%
70-79	138	5%	23.7	15	4%
80-89	171	13%	62.3	20	16%
90+	68	22%	98.0	16	38%
Total	598	<1%	7.4	56	1%

Proportion of cases with a severe outcome (ICU and/or death) amongst all cases, by age, time of infection, and vaccination status, NSW, 1 January 2020 to 25 December 2021

	% cases with severe outcomes (ICU and/or death)						
Age-group (years)	Jan 2020 - 15 Jun 2021		16 Jun – 25 Fully va	Dec 2021: ccinated	16 Jun – 25 Dec 2021: Un-vaccinated		
0-9	0%	(0 / 251)			<1%	(11 / 15,789)	
10-19	<1%	(1 / 325)	<1%	(1 / 5,238)	<1%	(33 / 12,303)	
20-29	<1%	(4 / 1,115)	<1%	(4 / 15,250)	1%	(109 / 12,483)	
30-39	1%	(15 / 1,098)	<1%	(7 / 8,354)	2%	(161 / 9,612)	
40-49	2%	(12 / 718)	<1%	(8 / 5,435)	3%	(189 / 6,431)	
50-59	4%	(30 / 710)	1%	(22 / 4,243)	7%	(286 / 4,325)	
60-69	7%	(44 / 656)	1%	(28 / 2,357)	11%	(243 / 2,138)	
70-79	12%	(46 / 394)	4%	(44 / 1,245)	20%	(177 / 902)	
80-89	21%	(26 / 122)	8%	(45 / 557)	30%	(135 / 450)	
90+	38%	(16 / 42)	17%	(28 / 168)	33%	(30 / 90)	
Total	4%	(194 / 5,431)	<1%	(187 / 42,847)	2%	(1,374 / 64,523)	

One 15 year old died with pneumococcal meningitis and COVID-19.

https://www.nsw.gov.au/covid-19/stay-safe/rules

https://education.nsw.gov.au/covid-19/advice-for-families/vaccination-requirements-for-school-sites

https://education.nsw.gov.au/covid-19/advice-for-families

https://www.health.gov.au/resources/collections/covid-19-vaccination-daily-rollout-update

https://www.health.nsw.gov.au/Infectious/covid-19/Pages/weekly-reports.aspx
 https://www.health.nsw.gov.au/Infectious/covid-19/Pages/weekly-reports.aspx

https://www.health.nsw.gov.au/Infectious/covid-19/Pages/weekly-reports.aspx https://www.health.nsw.gov.au/Infectious/covid-19/Pages/weekly-reports.aspx







### Canada

### (population 38 million)

#### PHSM<sup>26</sup> Schools & mitigation 27 Vaccination coverage 28 3<sup>rd</sup>/booster 1st Fully Age Standard PHSM including TTIQ and mask wearing encouraged in shared spaces and Re-opened in Sep and closed for winter subject to local advice. holidays in Dec 2021. Ontario resumed online vaccinated\* group dose (%) learning from early Jan 2022. Other provinces (years) (%) (%) Ontario closed indoor dining from early Jan 2022. will reopen schools in coming weeks. 90.4 87.6 12+ 16.6 Standard PHSM and additional measures 5-11 45.6 2.0 depending on local advice: physical distancing, 12-17 87.0 82.6 0.1 cohorting, masks when required, screening \*Canada also uses the J&J/Janssen vaccine which is a singletests. dose vaccine. Third/booster doses have been available to high-risk individuals in phases since Sep 2021. Vaccination of 12y+ commenced mid-May and 5-11y in mid-Nov Infections by age group 29,30 Deaths by age group 32 Hospitalisations in children<sup>31</sup> Figure 3. COVID-19 cases (n=2,160,132 $^{\perp}$ ) in Canada by date $^{-2}$ as of January 7, 2022, 9 am EST (by age -10 year groups $^{\vee}$ ) $^{\pm}$ Figure 7. Age and gender 4 distribution of COVID-19 cases deceased am EST (n=30,194 1 ) in Canada as of January 7, 2022, 9 Figure 7. Age and gender 4 distribution of COVID-19 cases hospitalized vin Canada as of January 7, 2022, 9 2029 In = 90 (0.3%) 30-39 n = 229 (0.8%) n = 7,528 (7.7%) n = 9.405 (9.6%) There have been 23 deaths with COVID-19 in children aged 0-Number (Proportion (%)) 19y throughout the pandemic. British Columbia (pop. 5.1 million; data has not been updated since Report #4 04 Jan 2022): Genomic surveillance<sup>33</sup> Variants of interes







https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/prevention-risks.html

https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/planning-2021-2022-school-year-vaccination.html

<sup>28</sup> https://health-infobase.canada.ca/covid-19/vaccination-coverage/

https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html

http://www.bccdc.ca/schools/news-resources/data-for-k12

https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html

https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html

### **Denmark**

PHSM<sup>34</sup>

### (population 5.9 million)

## Partial lockdown reinstated from 19 Dec 2021.

Previously all PHSM lifted on 8 Oct 2021, except for mask wearing in airports  $\alpha$  hospitals.

### Schools & mitigation 35

Closed early for winter holidays in 2021 and returned to school in early Jan 2022.

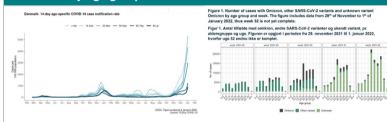
Standard PHSM; PCR or RAT screening tests: Recommended weekly for staff & students from grade 1 unless fully vaccinated or previously infected with COVID-19 in the last 6 months, twice weekly tests recommended for areas with high infection rates.

#### Vaccination coverage 36 2<sup>nd</sup> 3rd/ 1st Age group booster dose dose (%) (%) (%) (years) 12+ 82.1 79.2 53.1

Commenced 3<sup>rd</sup>/booster vaccination for people 65+y in late Oct and for all adults from late Nov 2021. Vaccination for 5-11y age group commenced late Nov 2021, coverage data not available.

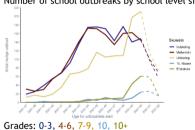
Deaths by age group<sup>42</sup>

### Infections by age group 37, 38, 39



Omicron is now the predominant variant in Denmark (-90%), six weeks after it was first detected.

Number of school outbreaks by school level since return to school:



## Hospitalisations in children 40,41

Graph is not available by age group

Age group	Co		hospitalised (%)	Comorbid. (%)	hospital stay	Hospitalised females	Hospitalise males
Aldersgru	pper	Bekræftede tilfælde	Indlagte i alt (%)	Heraf med komorbiditet (%)	Korte indlæggelser**	Indlagte kvinder	Indiagte mænd
	0-9	91.069	682 (1)	142 (21)	328	314	368
10	-19	143.417	520 (0)	170 (33)	197	282	238
20	-29	161.827	1.704 (1)	716 (42)	627	1.075	629
30	-39	121.875	2.369 (2)	1.055 (45)	850	1.442	927
40	-49	123.910	2.756 (2)	1.351 (49)	851	1.355	1.401
50	-59	103.731	3.594 (3)	2.139 (60)	807	1.598	1.996
60	-69	54.883	3.488 (6)	2.514 (72)	504	1.420	2.068
70	-79	30.966	4.724 (15)	4.039 (85)	420	1.992	2.732
80	-89	11.806	3.693 (31)	3.296 (89)	295	1.808	1.885
	90+	2.914	974 (33)	884 (91)	60	567	407
	alt	846.398	24.504 (3)	16.306 (67)	4939	11.853	12.651

which included 12 children with comorbidities.

For the entire pandemic, a total of 41 children in ICU,

Age group		onfirmed ases	Deaths (%)			Hospitalised females	Hospitalised males
Aldersgrupp	er	Bekræftede tilfælde	Dødsfald (%	6)	Heraf med komorbiditet (%)	Dødsfald kvinder	Dødsfald mænd
0-	.9	91.069	2 (0	)	2 (100)	0	2
10-1	9	143.417	1 (0	)	0 (0)	0	1
20-2	9	161.827	8 (0	1)	5 (63)	5	3
30-3	9	121.875	9 (0	)	4 (44)	5	4
40-4	19	123.910	26 (0	)	19 (73)	8	18
50-5	9	103.731	101 (0	)	77 (76)	37	64
60-6	9	54.883	282 (1	)	243 (86)	102	180
70-7	9	30.966	866 (3	1)	808 (93)	312	554
80-8	19	11.806	1266 (11	.)	1191 (94)	576	690
90	+	2.914	701 (24	1)	643 (92)	421	280
la	It	846.398	3262 (0	)	2992 (92)	1466	1796

Total of 3 deaths with COVID-19 in children aged 0-19y throughout the pandemic.







<sup>34</sup> https://en.coronasmitte.dk/rules-and-regulations 35 https://en.coronasmitte.dk/rules-and-regulations

https://experience.arcgis.com/experience/9824b03b114244348ef0b10f69f490b4/page/page\_3/

https://covid19-country-overviews.ecdc.europa.eu/countries/Denmark.html

https://covid19.ssi.dk/overvagningsdata/ugentlige-opgorelser-med-overvaagningsdata/ https://files.ssi.dk/covid19/omikron/statusrapport/rapport-omikronvarianten-07012022-27nk

https://files.ssi.dk/covid19/omikron/statusrapport/rapport-omikronvarianten-u/u1zuzz-z/n
 https://covid19.ssi.dk/overvagningsdata/ugentlige-opgorelser-med-overvaagningsdata

https://covid19-country-overviews.ecdc.europa.eu/countries/Denmark.html

<sup>42</sup> https://covid19.ssi.dk/overvagningsdata/ugentlige-opgorelser-med-overvaagningsdata

## England, UK

(population 56.6 million)

PHSM <sup>43</sup>	Schools & mitigation <sup>44</sup>	Vaccination coverage <sup>45</sup>			
Standard PHSM including TTIQ and mandatory mask wearing indoors, work from home default, proof of vaccination/negative test required for certain venues; previously most PHSM lifted until re-introduced in late Nov 2021.	ndoors, work from home default, proof of only negative test required for certain venues;				
Infections by age group <sup>46</sup>	Hospitalisations in children <sup>47,48</sup>	Deaths by age group <sup>49</sup>			
Figure 5: Weekly confirmed COVID-19 case rates per 100,000, tested under Pillar 1 and Pillar 2, by age group  3,000	Figure 43: Weekly hospital admission rate by age group for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch  (a)  350  0-4  5-14  15-24  25-44	Figure 55: Age-sex pyramid of laboratory confirmed COVID-19 deaths, for the past year    Female (28 day)   Male (28 day)   Female (60 day)   Male (60 day)			

Week ending





https://www.gov.uk/guidance/covid-19-coronavirus-restrictions-what-you-can-and-cannot-do
https://www.gov.uk/government/publications/actions-for-schools-during-the-coronavirus-outbreak/schools-covid-19-operational-guidance
https://coronavirus.data.gov.uk/details/vaccinations?areaType=nation&areaName=England
https://www.gov.uk/government/statistics/national-flu-and-covid-19-surveillance-reports-2021-to-2022-season
https://www.gov.uk/government/statistics/national-flu-and-covid-19-surveillance-reports-2021-to-2022-season
https://www.ons.gov.uk/government/statistics/national-flu-and-covid-19-surveillance-reports-2021-to-2022-season
https://www.ons.gov.uk/government/statistics/national-flu-and-covid-19-surveillance-reports-2021-to-2022-season
https://www.gov.uk/government/statistics/national-flu-and-covid-19-surveillance-reports-2021-to-2022-season

## **Finland**

## (population 5.5 million)

PHSM <sup>50</sup>	Schools & mitigation <sup>51</sup>	Vaccination coverage <sup>52</sup>				
Restrictions reinstated in late Dec 2021, including mandatory indoor mask wearing, proof of vaccination to attend premises, work from home default and density limits. Additional restrictions in early Jan 2022 including limits on household visitors, hospitality opening hours and access to public places.	Schools closed for winter holiday in late Dec 2021 and reopened in early Jan 2022.  Standard PHSM, cohorting, masks, ventilation, vaccination of 12y+ commenced early Aug 2021.	Age group 1st dose 2nd dose 3rd/booster (years) (%) (%) (%)  12+ 88.0 84.1 29.6  12-15 76.9 68.5 0.3  16-19 84.5 77.4 2.1  Third/booster dose is recommended for all aged 18y+.Fourth dose recommended for 12y+ with severe immunodeficiency. Vaccine offered to 5-11y children from late Dec 2021.				
Infections by age group <sup>53,54</sup>	Hospitalisations in children 55,56	Deaths by age group <sup>57</sup>				
Finland: 14-day age-specific COVID-19 case notification rate  - c15g - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 65 70g - 80 cg  - 15 26g - 25 48g - 50 54g - 80 cg  - 15 26g - 25 48g - 25 4	Incidence of hospitalisation by age group (14-day average):  Covid-19-attuman voisid eriboitsalraministion voideoastolie joutunisten mickanisministion voideoastolie joutunisten mickanisministen mickanis	Deaths by age group (for the whole period)  1,000  500  1,000  1,000  500  1,000  500  1,000  500  1,000  500  1,000  500  5				







bttps://valtioneuvosto.fi/en/information-on-coronavirus/current-restrictions
https://valtioneuvosto.fi/en/information-on-coronavirus/current-restrictions
https://sampo.th.fi/pivot/prod/en/vaccreg/cov19cov/summary\_cov19ageareacov
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https://sch.fi/fi/web/infektiotaudit-a-rokotukset/ajankohtaista-koronaviruksesta-covid-19/tilannekatsaus-koronaviruksesta/koronaviruksen-seuranta
https://covid19-country-overviews.ecdc.europa.eu/countries/Finland.html
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## Scotland, UK

(population 5.5 million)

PHSM <sup>58</sup>	Schools & mitigation <sup>59</sup>	Vaccination coverage 60
Minimal restrictions before reinstated in Dec 2021, including mandatory masks indoors, density limits, recommendation to travel only for essential reasons, work from home default and proof of vaccination to attend premises.	Closed for winter holidays in late Dec 2021 and returned to school in early Jan 2022.  Standard PHSM, cohorting, mask wearing recommended for adults and students from year 7 onwards, twice-weekly RAT screening for staff and secondary school students, vaccination of 16-17y commenced mid-Aug & 12-15y commenced mid-Sep 2021 (initially as single dose). Close contacts who are fully vaccinated or under 18.5y and produce a negative PCR test result do not need to isolate.	Age group 1st dose 2nd dose 3rd/booster (years) (%) (%) (%)  12+ 91.8 84.6 64.8  12-15 65.4 11.8 0.7  16-17 80.8 46.5 7.2  Third/booster dose available for all 18y+ and other high-risk groups. Vaccination is recommended for children aged 5-11 years who are immunocompromised.
Infections by age group <sup>61</sup>	Hospitalisations in children <sup>62</sup>	Deaths by age group <sup>63,64</sup>
Figure 3: Seven day case rate in Scotland by age group by specimen date. Refers to PCR testing only. Data up to 3 January 2022  4000  3500  3500  2500  3500  3500  3500  3500  3500  3500  3500  3500  3500  3500  3600	Hospital admissions related to COVID-19 (3-week rolling average)  Age 14 Age 24 Age 24 Age 12-17	Figure 10: Deaths by age group (weekly total by week beginning, NRS)  350 350 350 350 350 350 350 350 350 35







https://www.gov.scot/coronavirus-covid-19/

https://www.gov.uk/government/publications/actions-for-schools-during-the-coronavirus-outbreak/schools-covid-19-operational-guidance
https://coronavirus.data.gov.uk/details/vaccinations?areaType=nationfareaName=Scotland
https://coronavirus.data.gov.uk/details/vaccinations?areaType=nationfareaName=Scotland
https://scotland.shinyapps.io/pib:cations/coronavirus-covid-19-state-epidemic-07-january-2022/
https://www.gov.scot/publications/coronavirus-covid-19-state-epidemic-07-january-2022/
https://www.gov.scot/publications/coronavirus-covid-19-state-epidemic-07-january-2022/
https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/general-publications/weekly-and-monthly-data-on-births-and-deaths/deaths-involving-coronavirus-covid-19-in-scotland

## Singapore

(population 5.5 million)

### PHSM<sup>65</sup>

Restrictions re-introduced on 27 Sep 2021 after temporary easing.

Mandatory masks indoors & outdoors, TTIQ, work from home, shops open with density limits and digital check-in, vaccination requirements to enter some premises, limits on guests at home.

### Schools & mitigation 66

Closed for end-of-year holidays in mid-Nov 2021 and returned to school in early Jan 2022.

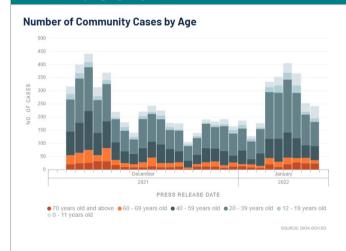
Standard PHSM, cohorting, RAT & temperature screening, mandatory masks 6y+ with exceptions, vaccination of 12y+ commenced early Jun 2021 and 5-11y in late Dec 2021.

### Vaccination coverage 67

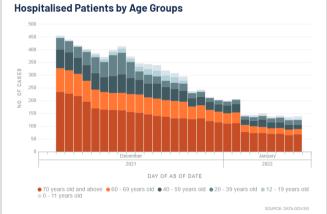
Age group	1st dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> /booster		
(years)	(%)	(%)	(%)		
Total pop.	89.0	87.0	46.0		

Third/booster dose available for all aged 18y+. From 14 Feb 2022, all 18y+ must receive a booster dose within 270 days of their 2nd dose to be considered fully vaccinated.

### Infections by age group 68



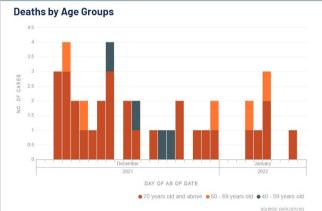
### Hospitalisations in children<sup>69</sup>



One child was admitted to ICU due to MIS-C for the entire pandemic.

There have been five cases of MIS-C throughout the entire pandemic, last reported 8 Nov 2021.

### Deaths by age group<sup>70</sup>



There have been 0 deaths in children throughout the entire pandemic.







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https://www.moh.gov.sg/covid-19-phase-advisory

https://www.moe.gov.sg/faqs-covid-19-infection

<sup>67</sup> https://www.moh.gov.sg/

https://www.moh.gov.sg/ https://www.moh.gov.sg/

https://www.mon.gov.sg/

## South Africa

### (population 60.4 million)

#### PHSM<sup>71</sup>

Since 1 Oct 2021, restrictions including partial curfew, mandatory masks 6y+ with exceptions, density limits.

Since 30 Dec 2021, lifting of certain restrictions including removal of curfew and increased density limits.

### Schools & mitigation 72,73

Closed for end-of-year holidays in mid-Dec 2021 and returned to school in early Jan 2022.

Standard PHSM, ventilation, symptom screening, mandatory masks 6y+ with exceptions, visitor limits, vaccination of 12y+.

### Vaccination coverage 74

Age group Fully

(years) vaccinated\* (%)

18+ 45.2

\*Note: South Africa also uses the J&J/Janssen vaccine which is a single-dose vaccine.

Vaccination is available for all aged 12y+. Coverage data for 12-17y not available.

#### Infections by age group<sup>75</sup>

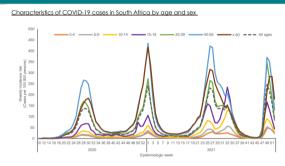
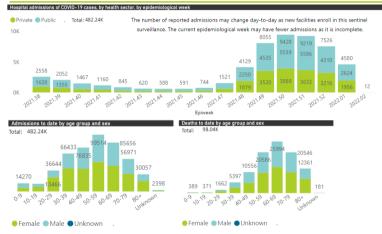


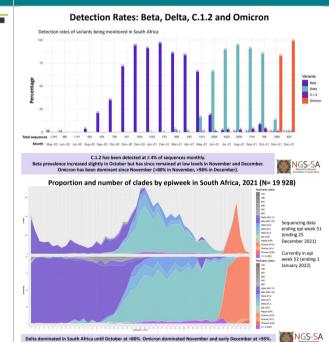
Figure 4: Weekly incidence risk of laboratory-confirmed cases of COVID-19 by age group in years and epidemiologic week South Africa 3 March 2020 – 1 January 2022 (n = 3 439 569, 32 854 missing age)

### Hospitalisations in children and deaths by age group 76



Total of 760 deaths with COVID-19 in children 0-19y throughout the entire pandemic. Deaths in children account for <1% of all deaths in South Africa.









https://www.gov.za/covid-19/resources/regulations-and-guidelines-coronavirus-covid-19

<sup>&</sup>lt;sup>72</sup> https://www.gov.za/covid-19/resources/regulations-and-guidelines-coronavirus-covid-19

https://sacoronavirus.co.za/vaccine-updates/

https://sacoronavirus.co.za/latest-vaccine-statistics/

https://www.nicd.ac.za/diseases-a-z-index/disease-index-covid-19/surveillance-reports/weekly-epidemiological-brief/

https://www.ind.ca.cza/diseases-a-z-index/disease-index-covorid-19/surveillance-reports/daily-hospital-surveillance-reports/

https://www.nicd.ac.za/diseases-a-z-index/disease-index-covid-19/sars-cov-2-genomic-surveillance-update/

## **USA**

## (population 332.8 million)

PHSM <sup>78</sup>	Schools & mitigation <sup>79</sup>	Vaccination coverage <sup>80,81</sup>				
The US CDC recommends indoor mask wearing for all unvaccinated and aged 2y+,	Closed for winter holidays in late Dec 2021 and reopened from early Jan 2022.	Age group (years)	1 <sup>st</sup> dose (%)	Fully vaccinated* (%)	3 <sup>rd</sup> /booster (%)	*Note: The US also uses the J&J/Janssen vaccine which is a single-dose vaccine. Third/booster dose for 65y+ and other high-
physical distancing, hand & surface hygiene, TTIQ, but adoption varies by State.	Standard PHSM, cohorting, masks, PCR &	5-11	26.1	17.0	-	risk individuals from Sep 2021, expanded to all 18y+ from late Nov 2021.
	RAT screening, vaccination commenced mid-May for 12+y and early Nov 2021 for	12-17	64.2	53.9	-	
	5-11y, but adoption varies by State.	18+	86.4	73.2	39.4	
Infections by age group <sup>82</sup>	MIS-C <sup>83</sup>	Deaths by ag	e group <sup>84,85</sup>		Genomic :	surveillance <sup>86</sup>
COVID-19 Weekly Cases per 100,000 Population by Age Group, United States  March 01, 2020 - January 08, 2022*  3000	Daily MIS-C Cases and COVID-19 Cases Reported to CDC (7-Day Moving Average)	COVID-19 Weekly Deaths p	oer 100,000 Population by a rch 01, 2020 - January 08, 202:	24.	CDC United	States: 9/26/2021 - 1/1/2022 United States: 12/26/2021 - 1/1/2022 NOWCAST
Age Group  -0 -4 -0 -5 -11 -12 -15 -13 -19 -13 -19 -13 -19 -14 -17 -15 -17 -15 -17 -18 -18	Buy Cook 19 and State of Onset	Age Group  -0 -40 -11 -12 -1516 -1718 -290 -490 -490 -5 -1112 -1516 -17		1000- 1000-	Compared Compared Compared Control of C	
COVID-NET: Entire Network: 2020-21: Weekly Rate To zeron, half dame all key and click and dray to create entanging. Draden click to reserve zeron.  To zeron, half dame all key and click and dray to create entanging. Draden click to reserve zeron.  Codendar Week, Ending (MMNW Week No.)  Any admitted child who is COVID-19 positive is likely to be included, so this is likely to be an overestimation of the number of children needing treatment for COVID-19.	There have been 6431 cases of MIS-C throughout the entire pandemic, including 55 deaths. The median age of MIS-C cases was 9y and half were between 5-13y.	the entire pander the US. There is marked fatality rates are States and Territ Report #4 04 Jan e.g. Texas (n=119	mic, accounting variation by State between 0-0.01 ories <sup>87</sup> (data has 2022): 9); Arizona (n=52); Puerto Rico (n	n children 0-17y througho for <0.1% of all deaths in e/Territory and case % for the vast majority of not been updated since .); California (n=43); =9); Guam (n=6); Hawaii	Omicron is no the US.	Contractor data, west ending  Dow responsible for ~95% of all infections in









https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/k-12-guidance.html https://covid.cdc.gov/covid-data-tracker/#vaccinations\_vacc-total-admin-rate-total

https://covid.cdc.gov/covid-data-tracker/#watchnatuns\_vatc-tucat-aumm-rac
https://covid.cdc.gov/covid-data-tracker/#watchnatun-demographics-trends
https://covid.cdc.gov/covid-data-tracker/#demographicsovertime
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https://covid.cdc.gov/covid-data-tracker/#demographicsovertime
https://www.cdc.gov/nchs/nvss/vsrr/covid.weekly/index.htm

https://covid.cdc.gov/covid-data-tracker/#variant-proportions
https://covid.cdc.gov/covid-data-tracker/#variant-proportions
https://www.aap.org/en/page/2019-novel-coronavirus-covid-19-infections/children-and-covid-19-state-level-data-report/
https://gis.cdc.gov/grasp/COVIDNEY.COVID19\_3.html

## **USA:** Comparison of states

A comparison of select US states based on 7-day incidence per 100,000 population and PHSM.

INDICATOR	MONTANA (po	p. 1.1 million)		TENNESSEE (pop. 6.8 million)			CALIFORNIA (pop. 39.5 million)			
7-day incidence per 100,000 population <sup>89</sup>	480.8			1300			1190			
PHSM	Mask wearing encouraged, physical distancing, TTIQ <sup>90</sup>			Mask wearing encouraged, physical distancing, TTIQ <sup>91</sup>			Indoor mask wearing mandatory in many indoor venues for all aged 2+, TTIQ <sup>92</sup>			
Schools & mitigation	Closed in Dec 2021 for winter holidays, returned to school in early Jan 2022.  Standard PHSM as recommended by US CDC, school-based mask mandates with option for parents to optout, vaccination encouraged, vaccination of 12+y commenced mid-May and 5-11y in early Nov 2021. 93		Closed in Dec 2021 for winter holidays, returned to school in early Jan 2022. Standard PHSM as recommended by US CDC, mask wearing and vaccination encouraged, vaccination of 12+y commenced mid-May and 5-11y in early Nov 2021. 94		Closed in Dec 2021 for winter holidays, returned to school in early Jan 2022.  Standard PHSM as recommended by US CDC, mask wearing mandatory for all aged 2+, PCR & RAT screening, vaccination of 12+y commenced mid-May and 5-11y in early Nov 2021, mandatory staff vaccination or weekly testing. 95					
Vaccination coverage <sup>96</sup>	Age group (years) 5-11 12-17 18-64 65+ *The US also uses t	1st dose (%) 20.4 47.8 66.1 99.9 the J&J/Janssen vacc	Fully vacc.* (%) 13.3 40.6 57.3 91.3 tine which is a single-dose	Age group (years) 5-11 12-17 18-64 65+	1 <sup>st</sup> dose (%) 13.2 41.8 65.4 96.0	Fully vacc.* (%) 8.8 34.9 56.8 88.1	Age group (years) 5-11 12-17 18-64 65+	1st dose (%) 28.6 78.6 92.3 99.9	Fully vacc.* (%) 17.9 64.3 74.7	
	*The US also uses the J&J/Janssen vaccine which is a single-dose vaccine. State-specific data on 3 <sup>rd</sup> /booster dose coverage not available.									

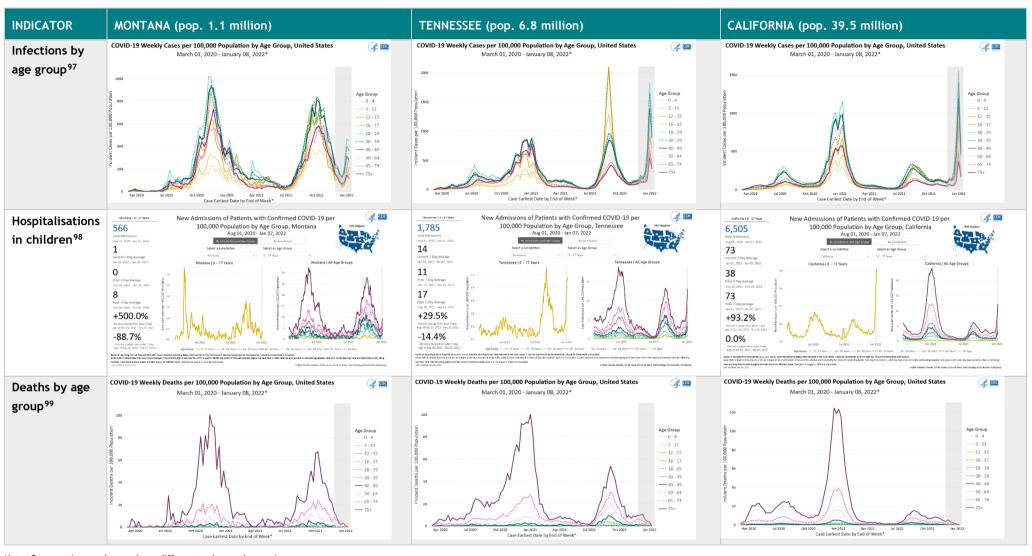






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bhtps://covid19.mt.gov/index
https://covid19.tn.gov/prevention/
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https://dohhs.mt.gov/publichealth/cdepi/diseases/CoronavirusMT/index
https://www.tn.gov/health/cedepi/cov/educational-resources.html
https://www.tn.gov/health/cedepi/clobCr/Pages/COVID-19/K-12-Guidance-2021-22-School-Year.aspx
https://www.mavusching.org/coronavirus-covid-19/vaccine-tracker

https://www.mayoclinic.org/coronavirus-covid-19/vaccine-tracker



Note: Comparative graphs may have different scales on the y-axis.







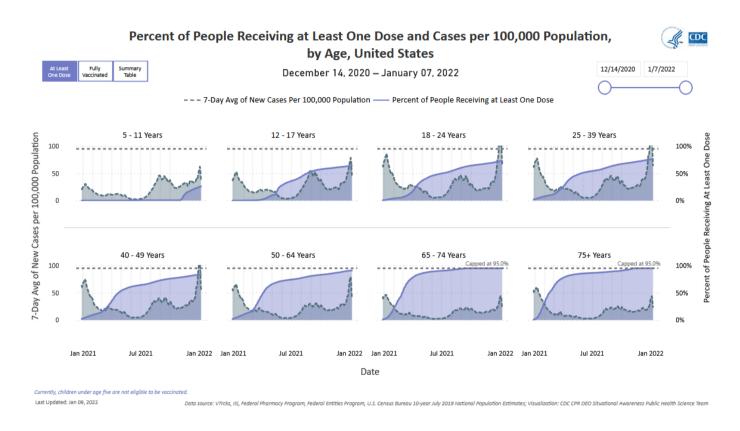
<sup>97</sup> https://covid.cdc.gov/covid-data-tracker/#demographicsovertime

https://covid.cdc.gov/covid-data-tracker/#new-hospital-admissions

https://covid.cdc.gov/covid-data-tracker/#demographicsovertime

## USA: Impact of vaccination on disease incidence

Seven-day incidence per 100,000 population in people who received at least one dose of vaccine, by age group. 100









<sup>100</sup> https://covid.cdc.gov/covid-data-tracker/#vaccinations-cases-trends



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 $\underline{\text{https://www.mcri.edu.au/research/themes/infection-and-immunity/asia-pacific-health}}$ 





