







COVID-19 and Children's Surveillance Report

Number 8

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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.
- The Netherlands has been added to the report this week.
- Data on Multisystem Inflammatory Syndrome in Children (MIS-C), otherwise known as Paediatric Inflammatory Multisystem Syndrome (PIMS-TS), is included where 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 for most countries in this report.
- The number of infections in unvaccinated and vaccinated children (as vaccines generally have lower effectiveness against Omicron infection but are still highly effective against severe disease) 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 generally increased as vaccination of adults increased. ^{1,2} Many countries are now vaccinating adolescents and others, including Australia, most European countries, Singapore and the USA, have begun vaccinating children aged 5 years and over.
- With the predominance of Omicron in many settings and with vaccines having lower effectiveness against infection for this variant, 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 occurred in 20-29 year olds initially, with infections in children and adolescents now increasing in many settings as school start to reopen.
- Many schools were closed for the end-of-year holidays and most have reopened throughout January 2022.
- The Omicron variant of concern³ was first reported from South Africa on 25 November 2021. At the time of writing, it has been detected in 131 countries⁴, up from 123 countries in the last report. Omicron is now the predominant variant across many countries due to its high transmissibility, including in Australia, Canada, Denmark the Netherlands, South Africa, the UK and USA.
- COVID-19 epidemiology in children and adolescents varies by setting.
- There has been an increase in paediatric hospitalisations, more so in the 0-4 year old age group, but this has been a combination of admission for COVID-19 treatment and incidentally testing positive when admitted for an unrelated condition. 5 Nevertheless, being a COVID-19 positive patient presents its own health care and workforce challenges.
- While paediatric hospitalisations increased due to the sheer volume of the increase number of cases in the US, Omicron is less severe compared to Delta.⁶
- For hospitalised children aged 0-4 years, croup and bronchiolitis are common clinical manifestations, similar to other common respiratory viruses.
- Victoria closed schools for holidays from mid-December 2021 and they reopened in late January 2022. Early childhood centres have remained open.
 - o Density limits have been reintroduced with work from home default, indoor mask wearing is required for all aged 8 years and older.
 - Schools reopened with multi-layered mitigation strategies in place, including twice-weekly surveillance rapid antigen tests (RAT), mandatory third vaccine dose for staff, supply of
 air-purification devices and masks required for all staff and students grade 3 and above, and encouraged in younger students. Remote learning will be considered as a localised,
 short-term last resort.
 - Approximately 89% 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, and ~43% have received their first dose.
 - There is now a clear downward trend of infections, with ~13,000 confirmed cases per day in all ages.
 - Infections are highest in the 30-39 year age group followed by the 20-29 years. Infections are declining in all age groups.
 - Testing capacity was constrained in all ages due to increased demand. Since 8 January 2022, Victorian daily case numbers include both PCR and RAT positive results.
 - $\circ\quad$ There is no hospitalisation data available by age, but overall numbers are beginning to decline.
 - Two children have died with COVID-19 throughout the entire pandemic.
- NSW schools closed for holidays from mid-December 2021 and they reopened in late January 2022. Early childhood centres have remained open.
 - o Indoor mask wearing is required for all aged 12 years and older.
 - Schools reopened with multi-layered mitigation strategies in place, including twice-weekly surveillance RAT, mandatory third vaccine dose for staff, supply of air-purification devices, masks required for all staff and high school students (and encouraged for primary school children), and cohorting.
 - o Approximately 83% of 12-15 year olds have received at least one dose of vaccine. Children aged 5-11 years are now eligible for vaccination and ~39% have received their first dose.
 - Case numbers are on an overall downward trend, with currently ~19,000 confirmed cases per day in all ages.
 - Infections are highest in the 16-39 year age group and lowest in the 0-11 year age group (data to Report #7, 24 January 2022).







¹ Russell FM, Anderson V, Crawford N, Curtis N, Danchin M, Goldfeld S, Hart J, Keeble T, Medley T, Mulholland K, Ranganathan S, Suryawijaya Ong D, Overmars I, Perrett K, Steer A. COVID-19 in Early Childhood Education and Care & Schools. Research Brief Number 1, Version 1: 14 October 2021. Parkville, Victoria, Australia: Murdoch Children's Research Institute, The Royal Children's Hospital, University of Melbourne Department of Paediatrics; 2021. https://www.mcri.edu.au/sites/default/files/media/documents/covid-19 in early childhood education and care and schools. Research Brief Number 1, Version 1: 14 October 2021. Parkville, Victoria, Australia: Murdoch Children's Research Institute, The Royal Children's Hospital, University of Melbourne Department of Paediatrics; 2021. https://www.mcri.edu.au/sites/default/files/media/documents/covid-19 in early childhood education and care and schools. Research Brief Number 1, Version 1: 14 October 2021. Parkville, Victoria, Australia: Murdoch Children's Hospital, University of Melbourne Department of Paediatrics; 2021. https://www.mcri.edu.au/sites/default/files/media/documents/covid-19 in early childhood education and care and schools. Research Brief Number 1, Version 1: 14 October 2021. https://www.mcri.edu.au/sites/default/files/media/documents/covid-19 in early childhood education and care and schools. Research Brief Number 1: 14 October 2021. https://www.mcri.edu.au/sites/default/files/media/documents/covid-19 in early childhood education and care and schools.

American Assertion of Route in Royal Children and COVID-19: State-Level Data Report 14 October 2021. Idlinois, US: APP; 2021. https://www.aap.org/en/pages/2019-novel-coronavistus-sovid-19-inferious/children-and-covid-in-State-Level Data Report 14 October 2021. Idlinois, US: APP; 2021. https://www.aap.org/en/pages/2019-novel-coronavistus-sovid-19-inferious/children-and-covid-in-State-Level Data Report 14 October 2021. Idlinois State-Level Data

World Health Organization (WHO), Update on Omicron 28 November 2021. Geneva, Switzerland: WHO; 2021. https://www.who.int/news/item/28-11-2021-update-on-omicron

GISAID. Tracking of Variants. Munich, Germany: GISAID; 2022. https://www.gisaid.org/hcov19-variants/

New York State Department of Health. Pediatric COVID-19 Update Of January 2012. New York, US: New York State Department of Health. Pediatric Covid-19 hospitalization_report_summary.pdf

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

Omicron drives record cases of child COVID hospitalisations. Financial Times. 17 January 2022. https://www.ft.com/content/28be9d3f-0b12-4c33-bda9-fbff375c0b7e

- There is no data on hospitalisation trends by age, but overall hospitalisations have increased in recent weeks (data to Report #7, 24 January 2022).
 - From late November 2021 to early January 2022, 7 children aged 0-9 years were admitted to ICU, and 4 unvaccinated and 4 fully vaccinated adolescents aged 10-19 years were admitted to ICU.
- Two children have died with COVID-19 throughout the entire pandemic.
- In Europe and North America, cases are on the rise across all age groups in many countries, although there is now a downward trend in several countries and regions, including the United Kingdom, Canada and several states in the USA.
- Canada closed its schools for the holidays in December 2021 and they reopened in mid-January 2022.
 - Public Health and Social Measures (PHSM) vary by province. Ontario introduced further restrictions including closure of indoor dining which has now been eased.
 - Since November 2021, all 5-11 year olds have been offered vaccine with an eight week interval between doses. Approximately 53% of 5-11 year olds and 88% of 12-17 year olds have received at least one dose of vaccine.
 - There was a steep increase in infections due to the Omicron variant, which overtook the Delta variant, but there is now a steep downward trend in all age groups.
 - There is no data on hospitalisation trends by age, but overall hospitalisations have increased in recent weeks.
 - In the Province of British Columbia, there is currently an increase in hospitalisations in children, including an increase in critical care admissions in those aged 0-4 years. Between 18 July 2021 and 15 January 2022, the hospitalisation rate among unvaccinated 12-17 year olds was approximately 39 times higher compared to those who were partially or fully vaccinated.
 - There have been 27 deaths with COVID-19 in children aged 0-19 years throughout the entire pandemic.
- Denmark closed their schools early for the end-of-year holidays and they reopened in early January 2022.
 - Additional PHSM were reintroduced, including a partial lockdown due to a rapid rise in COVID-19 cases due to Omicron. Restrictions were eased in mid-January 2022, including the reopening of certain public venues.
 - Approximately 83% 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.
 - Total infection rates continue to remain on a steep upward trend, although this is stabilising in the 50+ year age groups. Infection rates are now highest in the 4-15 year age group. The BA.2 subvariant of Omicron is gaining ground in Denmark, with a frequency of approximately 45% in mid-January 2022.8
 - The number of school outbreaks are declining.
 - Hospitalisations in children have remained relatively stable, with a small increase in unvaccinated children.
 - There have been three deaths with COVID-19 in children aged 0-19 years throughout the entire pandemic. Deaths are predominantly in those unvaccinated or double vaccinated and aged 70 years and older.
- **England** reopened its schools in early January 2022 following the end-of-year holidays.
 - Additional PHSM were reintroduced in late November 2021, including mask wearing in certain indoor venues, work from home default and proof of vaccination. RAT is available for all twice weekly.
 - Approximately 54% of 12-15 year olds and 67% of 16-17 year olds have received at least one dose of vaccine. Vaccination in 5-11 year olds is only recommended for immunocompromised children.
 - Infections across most age groups are now on a downward trend, except the 0-4 and 5-19 year age group.
 - Infection rates are now highest in the 5-9 year age group and continue to increase. Infections in the 10-19 year age group are also on an upward trend, with infections exceeding adults.
 - Overall hospitalisations in all ages are stabilising and on a downward trend.
 - There was a steep increase in 0-4 year olds and there is currently an increase in 5-14 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.
 - Children admitted to hospital with Omicron require less support and are discharged earlier, compared to children admitted earlier in the pandemic.9
 - Hospitalisations in children for Omicron are less than for other common non-COVID-19 infections that hospitalise children each year. 10
 - MIS-C cases are not increasing despite the large rise in Omicron cases.







⁸ Now, an Omicron variant, BA.2, accounts for almost half of all Danish Omicron-cases. Statens Serum Institut. 20 January 2022. https://en.ssi.dk/news/news/2022/omicron-variant-ba2-accounts-for-almost-half-of-all-danish-omicron-cases of very young children. BMJ. 2022;376:o110. https://doi.org/10.1136/bmj.o110

Omicron drives record cases of child COVID hospitalisations. Financial Times. 17 January 2022. https://www.ft.com/content/28be9d3f-0b12-4c33-bda9-fbff375c0b7e

- o There have been 81 deaths with COVID-19 in children aged 0-19 years in the past year.
- Finland reopened its schools in early January 2022 following the end-of-year holidays. There are no restrictions on children's activities.
 - o 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 76% of 12-15 year olds and 84% of 16-19 year olds have received at least one dose of vaccine. All children aged 5-11 years are now offered vaccine.
 - o Infections remain high but are beginning to stabilise in most age groups.
 - Infection rates are higher in unvaccinated people compared to vaccinated people in most age groups, which is more apparent in the younger age groups.
 - Infections are highest in the 12-19 year age group.
 - Overall hospitalisations continue to increase in all age groups, but remains low in children. There are more hospitalisations in the unvaccinated compared with the vaccinated in all age groups, with the disparity most marked with each older age cohort.
 - o There have been no deaths in anyone <30 years old throughout the entire pandemic.
- The Netherlands reopened its schools in early January 2022 following the end-of-year holidays.
 - o Restrictions continue to be in place, including indoor mask wearing, work from home default, household visitor limits and density limits.
 - o Approximately 69% of 12-17 year olds have received at least one dose of vaccine. All children aged 5-11 years are now offered vaccine.
 - o Infections are declining in all age groups continue, and are highest amongst 10-19 year olds.
 - o Hospitalisations increased with Omicron, and are now declining, but remained low in children.
 - The number of deaths due to COVID-19 in children is not reported.
- Scotland reopened its schools in early January 2022 following the end-of-year holidays.
 - o Restrictions eased in late January 2022, including removal of density and household visitor limits. Hybrid work arrangements have been re-introduced, replacing the direction to work from home. Indoor mask wearing remains mandatory. Despite having more restrictions than England, infection rates (1 in 20) were the same.¹¹
 - Approximately 68% of 12-15 year olds and 83% 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 all age groups declined from the Omicron peak and are now stable, except in the 0-14 year age group which remained higher and is slowly increasing.
 - The 0-14 year age group now has the highest rates of infection.
 - Hospitalisations in children are on the rise, primarily in the <1 year age group. Hospitalisations also include children who test positive, irrespective of the reason for admission, so is an overestimate of hospitalisations for treatment of COVID-19.
 - There have been two deaths due to COVID-19 in children aged 0-14 years in the past year.
- Singapore 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.
 - o Approximately 91% 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 ~5200 cases per day, primarily in the 20-39 year age group.
 Overall hospitalisations are increasing, although admissions remain lowest in children.
 - 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 reopened its schools in early January 2022 following the end-of-year holidays.
 - o Certain restrictions such as the curfew and density limits were eased since late December 2021.
 - o Approximately 47% of the entire population is fully vaccinated. Vaccination is not offered to children aged 5-11 years.
 - o There was a rapid increase in infections due to Omicron in all age groups but this has rapidly decreased, with children <19 years having the lowest infection rates.
 - o Overall hospitalisations continue to decrease. However, many admissions were incidental (admitted for other reasons and subsequently test positive).
 - o There have been 799 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.

¹¹ Office for National Statistics (ONS). Coronavirus (COVID-19) Infection Survey, UK: 21 January 2022. London, UK: 0NS; 2022. https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/coronaviruscovid19infectionsurveypilot/latest







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- In the United States, schools have reopened in many States following the end-of-year holidays.
 - The US Centres for Disease Control and Prevention (CDC) recommend multi-layered PHSM, but adoption varies by State and Territory.
 - Approximately 30% of 5-11 year olds and 66% 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.
 - o Infections remain high but are on a downward trend overall. Infections are highest in the 18-39 year age group.
 - o There was an increase in hospitalisation rates among children aged 0-4 years, but rates are now decreasing.
 - There have been 748 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 (122) and there are four States that have reported 0 deaths throughout the entire pandemic.
 - o A total of 6431 cases of MIS-C have been reported, including 55 deaths (data to Report #5, 10 January 2022).
 - There does not appear to be an increase in MIS-C despite the surge of Omicron cases, but this could be due to a lag in reporting and surveillance is ongoing.
 - 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.

Summary of COVID-19 epidemiology in children and adolescents

Country	Cases	Hospitalisations	MIS-C/PIMS-TS	Deaths^
VIC, Australia	↓	Not available	Not reported	2 b
NSW, Australia	\downarrow	^*	Not reported	2 ^b
Canada	\downarrow	^*	Not reported	27 ^b
Denmark	↑	Stable	Not reported	3 ^b
England, UK	\downarrow	\downarrow	Not reported	81ь,#
Finland	Stable	^*	Not reported	0
Netherlands	↑	Stable	Not reported	Not reported
Scotland, UK	\downarrow	^*	Not reported	2a,#
Singapore	↑	\uparrow	5 cases	0
South Africa	\downarrow	↓*	Not reported	799 ^b
USA	Stable	↓	6431 cases	748 ^b

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

¹² 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/







^{*}Available data includes both children and adults.

[^]Age range for child deaths between 0-19y except Scotland (0-14y) and USA (0-17y). Deaths ^adue to COVID-19 or ^bwith COVID-19. #In the past year.



Abbreviation	Term
CDC	US Centres for Disease Control and Prevention
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 ¹³	Schools & mitigation 14		Vaccination o	Vaccination coverage 15,16					
Indoor mask-wearing required for all aged 8+, all shops open, TTIQ, QR check-in, proof of vaccination to attend some premises. From Jan 2022, density limits reintroduced and work from home default. A positive RAT result is reported as a "probable" COVID-19 case (treated as a PCR positive case and reported in daily case numbers). Certain essential workers can be exempt from close contact home isolation requirements to attend work.	Closed for holidays from mid-Dec returned to school in late Jan 202 Multi-layered mitigation strategie introduced, including twice-week RAT, mandatory third vaccine dos supply of air-purification devices for all staff and students grade 3 Remote learning will be considered short-term last resort.	Age group (years) 1st dose (%) 2nd dose (%) 3rd/booster (%) 5-11 43.4 12-15 89.1 84.5 - 16+ 94.2 92.9 - 18+ - 38.0 Fourth dose for immunocompromised recommended from early Jan 2022, booster dose available to all eligible adults aged 18y+. Three primary dose recommendation extended to all severely immunocompromised people aged 5y+ from mid-Jan 2022. Vaccination for 5-11y available from 10 Jan 2022.							
Infections by age group ¹⁷	Hospitalisations in children 18		Deaths by ag						
Daily new cases (to 29/01/2022)	Current cases in hospital 889	69 coses in ICU	People who have pa: 19 30/01/2022	ssed away with COVID-					
10000 100000 100000 100000 100000 100000 100000 100000 100000 1000000	No age breakdown					rotel 1 1 3 11 20 81 147 425 754 541 1,990 Indemic, including one 15 Conditions and in palliative			



care.





¹³ https://www.coronavirus.vic.gov.au/coronavirus-covidsafe-settings
14 https://www.coronavirus.vic.gov.au/education-information-about-coronavirus-covid-19
15 https://www.health.gov.au/resources/collections/covid-19-vaccination-daily-rollout-update
16 https://twitter.com/vicGovDH
17 Data from: https://www.coronavirus.vic.gov.au/victorian-coronavirus-covid-19-data
18 https://www.coronavirus.vic.gov.au/victorian-coronavirus-covid-19-data
19 https://www.coronavirus.vic.gov.au/additional-covid-19-case-data#cases-in-hospital

Australia: New South Wales

(population 8.2 million)

PHSM²⁰

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. Certain essential workers can be exempt
from close contact home isolation requirements to
attend work.

Schools & mitigation 21

Closed for holidays from mid-Dec 2021 and returned to school in late Jan 2022.

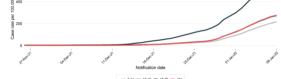
Multi-layered mitigation strategies have been introduced, including twice-weekly surveillance RAT, mandatory third vaccine dose for staff, supply of air-purification devices, masks required for all staff and high school students, cohorting.

Vaccination coverage 22,23 2nd dose (%) Age group (years) 1st dose (%) 3rd/booster (%) 5-11 38.7 12-15 83.3 78.6 16+ 95.4 94.0 18+ 39.4

Fourth dose for immunocompromised recommended from early Jan 2021, booster dose available to all eligible adults aged 18y+. Three primary dose recommendation extended to all severely immunocompromised people aged 5y+ from mid-Jan 2022. Vaccination for 5-11y available from 10 Jan 2022.

Infections by age group 24*





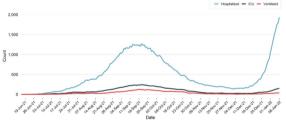
Omicron is now the dominant variant in NSW.

Hospitalisations in children 25*

	1 Jan 2020 – 15 Jun 2021		16 Jun	- 25 Nov 2021	26 Nov 2021 – 8 Jan 2022			
Age-group (years)	Hospitalised	Percentage of cases hospitalised	Hospitalised	Percentage of cases hospitalised	Hospitalised	Percentage of cases hospitalised		
0-9	5	2%	290	2%	185	2%		
10-19	8	2%	359	3%	124	2%		
20-29	23	2%	970	7%	428	2%		
30-39	43	4%	1,255	10%	502	4%		
40-49	41	6%	1,293	14%	360	6%		
50-59	59	8%	1,269	19%	440	8%		
60-69	85	13%	1,046	27%	525	13%		
70-79	68	17%	764	40%	679	17%		
80-89	40	33%	508	54%	660	33%		
90+	13	31%	128	54%	197	31%		
Total	385	7%	7,882	10%	4,100	1%		

Hospitalisations among people diagnosed with COVID-19, by age group, NSW, 1 January 2020 to 8 January 2022

Figure 4b. Number of cases in hospital, in ICU and ventilated by date, NSW, from 16 June 2021 to 8 January 2022



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 26*

Table 7. Deaths following recent infection with COVID-19, by age group and location, 26 November 2021 to 8 January 2022

	Number of deaths	One of the Uter water	Location of death				
Age-group (years)	Number of deaths	Case fatality rate	Health care facility	Aged care facility			
0-9	1	<1%	0	0			
10-19	0	0%	0	0			
20-29	1	<1%	1	0			
30-39	1	<1%	1	0			
40-49	0	0%	0	0			
50-59	3	<1%	3	0			
60-69	8	<1%	8	0			
70-79	29	<1%	25	4			
80-89	30	<1%	28	2			
90+	25	2%	17	7			
Total	98	<1%	83	13			

Table 6. Proportion of cases with a severe outcome (ICU and/or death) amongst all cases, by age, time of infection, and

Age-				16 Jun 2021 – 25 Nov 2021					26 Nov 2021 – 8 Jan 2022						
group (years)	group 2021		т	Two effective doses		No effective doses		Two effective doses			No effective doses				
0-9	0%	(0 / 2	51)	-		<1%	(10 / 12,409)	-		-	<1%	(7/2	24,209		
10-19	<1%	(1 / 3:	25) <	<1%	(0 / 155)	<1%	(28 / 10,078)	<1%	(4/	32,886)	<1%	(4/	7,458		
20-29	<1%	(4 / 1,1	15) <	<1%	(2 / 1,035)	1%	(96 / 10,144)	<1%	(12/	88,028)	<1%	(4/	865		
30-39	1%	(15 / 1,0	98) <	<1%	(5 / 1,406)	2%	(152 / 8,023)	<1%	(16/	52,145)	1%	(7/	643		
40-49	2%	(12/ 7	18) <	<1%	(4 / 1,304)	3%	(178 / 5,516)	<1%	(20/	36,605)	1%	(5/	393		
50-59	4%	(30 / 7	10)	1%	(15 / 1,159)	7%	(261 / 3,795)	<1%	(23/	30,100)	7%	(14/	210		
60-69	7%	(44 / 6	56)	2%	(17 / 813)	13%	(228 / 1,772)	<1%	(47/	16,626)	8%	(15/	186		
70-79	12%	(46 / 3	94)	7%	(37 / 565)	23%	(163 / 708)	1%	(75/	7,264)	10%	(15/	157		
80-89	21%	(26 / 1)	22) 1	11%	(34 / 298)	36%	(129 / 359)	2%	(52/	2,964)	8%	(6/	74		
90+	38%	(16/	42) 2	21%	(24 / 114)	45%	(29 / 64)	3%	(23/	763)	12%	(3/	24		
Total	4%	(194 / 5,4)	31)	2%	(138 / 6,849)	2%	(1,274 / 52,868)	<1%	(272 / 2	267,381)	<1%	(80 / 3	34,219		

Two children have died with COVID-19 throughout the pandemic, including one 15 year old with pneumococcal meningitis and one three-year-old with underlying genetic disorder.

*Note: NSW data has not been updated since Report #7 (24 Jan 2022).





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

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

Canada

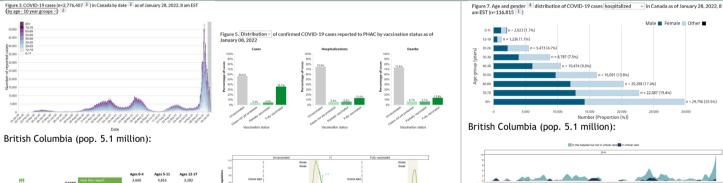
(population 38 million)

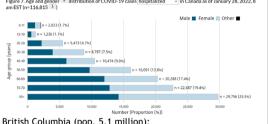
PHSM²⁷ Schools & mitigation 28 Standard PHSM including TTIQ and mask wearing encouraged in shared spaces and Closed for winter holidays in Dec 2021 and subject to local advice. returned to school in mid-Jan 2022. Ontario resumed in-person learning following a brief Ontario introduced a partial lockdown in early Jan before easing restrictions in switch to remote learning due to rising case late Jan 2022. numbers. Standard PHSM and additional measures depending on local advice: physical distancing. cohorting, masks when required, screening tests. RATs provided to students in Ontario for return to in-person learning. Infections by age group 30,31 Hospitalisations in children 32 Figure 7. Age and gender $\frac{4}{}$ distribution of COVID-19 cases hospitalized am EST (n=116,815 $\frac{1}{}$) Figure 3. COVID-19 cases (n=2,776,407 $^{-1}$) in Canada by date $^{-2}$ as of January 28, 2022, 8 am EST (by age -10 year groups $^{-1}$) Figure 5. Distribution of confirmed COVID-19 cases reported to PHAC by vaccination status as of

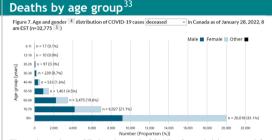
Vaccination coverage 29 Fully 3rd/booster Age group 1st dose vacc.* (years) (%) (%) (%) 5-11 53.1 8.6 12-17 87.6 82.9 1.1 83.8 77.9 37.3 Total pop.

*Canada also uses the J&J/Janssen vaccine which is a singledose 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 2021.







There have been 27 deaths with COVID-19 in children aged 0-19y throughout the pandemic.



8

■ murdoch children's research 🛏 🔳 📘 institute





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

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

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

Denmark

PHSM³⁵

(population 5.9 million)

Partial lockdown reinstated from 19 Dec 2021. Restrictions eased in mid-January
2022 including reopening of certain public venues.

Previously all PHSM lifted on 8 Oct 2021, except for mask wearing in airports $\mbox{\^{a}}$ hospitals.

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

Standard PHSM, and 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).

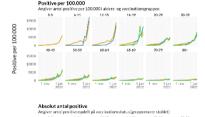
Vaccination coverage 37 2nd 1st 3rd/ Age group dose booster dose (years) (%) (%) (%) 12+ 82.5 80.7 60.6

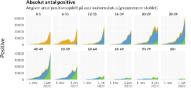
Commenced 3rd/booster vaccination for people 65+y in late Oct and for all adults from late Nov 2021. Vaccination for 5-11y age group commenced late Nov 2021, coverage data not available.

Infections by age group 38,39

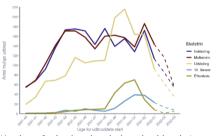
Weekly positive cases by age and vaccine status*

Ugentligt antal positive opdelt på alder og vaccinestatus Relative og absolutte antal personer med positiv SARS-CoV-2 PCR test Viser kun ikke-tidligere positive.





Omicron is now the predominant variant in Denmark (>90%).



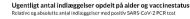
Number of school outbreaks by school level since return to school:

Grades: 0-3, 4-6, 7-9, 10, 10+

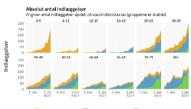
Hospitalisations in children 40,41 Weekly admissions by age and vaccine status*

Schools & mitigation 36

recently duffilissions by age and vaccine status







■ Ingen vaccination ■ Fuld effekt 2 doser ■ Fuld effekt 3 doser

For the entire pandemic, a total of 66 children in ICU, which included 18 children with comorbidities.

Deaths by age group 42,43

Weekly deaths by age and vaccine status*

Ugentligt antal døde opdelt på alder og vaccinestatus Relative og absolutte antal døde med positiv SARS-CoV-2 PCR test





Ingen vaccination Full effect 2 doser Full effect 3 doser

Kristoffer T. Baek, covid19dannark.dk, data: SSI

Total of 3 deaths with COVID-19 in children aged 0-

19y throughout the pandemic.

*(1) Numbers per 100,000; (2) Absolute numbers Yellow (unvaccinated), blue (two doses), green (three doses)

Ingen vaccination Fuld effekt 2 doser Fuld effekt 3 dose

Kristoffer T. Bæk, covid19danmark.dk, data: SSI





³⁵ https://en.coronasmitte.dk/rules-and-regulations

https://en.coronasmitte.dk/rules-and-regulations

https://experience.arcgis.com/experience/9824b03b114244348ef0b10f69f490b4/page/page_3/

³⁸ https://covid19danmark.dk/

https://covid19.ssi.dk/overvagningsdata/ugentlige-opgorelser-med-overvaagningsdata

⁴⁰ https://covid19danmark.dk/

https://covid19.ssi.dk/overvagningsdata/ugentlige-opgorelser-med-overvaagningsdata

⁴² https://covid19danmark.dk/

https://covid19.ssi.dk/overvagningsdata/ugentlige-opgorelser-med-overvaagningsdata

England, UK

(population 56.6 million)

PHSM⁴⁴ Schools & mitigation 45 Vaccination coverage 46 Age group Closed for winter holidays in Dec 2021 and returned to Standard PHSM including TTIQ and mandatory mask school in early Jan 2022. 2nd dose (%) (vears) 1st dose (%) 3rd/booster (%) wearing indoors, work from home default, proof of 12+ 91.0 83.9 64.4 vaccination/negative test required for certain venues; Standard PHSM, cohorting, mask wearing required for previously most PHSM lifted until re-introduced in late 12-15 53.7 15.7 0.1 adults and students from year 7 onwards, twice-weekly Nov 2021. RAT screening for staff and secondary school students. 5.7 16-17 66.6 47.0 vaccination of 16-17y commenced mid-Aug & 12-15y Third/booster dose available for all 18y+ and other high-risk groups. Vaccination is recommended for children aged 5-11 years who are commenced mid-Sep 2021 (initially as single dose). Close immunocompromised. contacts who are fully vaccinated or under 18.5y and produce a negative PCR test result do not need to isolate. Deaths by age group 50 Infections by age group 47 Hospitalisations in children 48,49 Figure 5: Weekly confirmed COVID-19 case rates per 100,000, tested under Pillar 1 and Pillar 2, by age group Figure 43: Weekly hospital admission rate by age group for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch Figure 55: Age-sex pyramid of laboratory confirmed COVID-19 deaths, for the past ■Female (28 day) ■Male (28 day) ■Female (60 day) ■Male (60 day) 3.000 15-24 --- 25-44 8 2,500 ----65-74 ----75-84 -·- 85+ 70-79 ≥ 2.000 음 1,500 50-59 # 200 150 **8** 30-39y 100 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 1 3 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 2 MIS-C⁵¹ 20 000 15 000 10 000 5 000 5 000 10 000 15 000 20 000 COVID-19-positive hospital admissions as a percentage of the rate during the MIS-C vs Child COVID-19 cases January peak (rate in week ending 17 January = 100%), by age, England A total of 81 deaths with COVID-19 in the past year: <5y: 17 5-9v: 8 100 = 17 January 2021 peak 10-19y: 56 200 0₁ 17 Jan 21 23 Jan 22 17 Jan 21 23 Jan 22 17 Jan 21 23 Jan 22







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⁴⁴ 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

⁴⁶ 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/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/articles/coronaviruscovid19latestinsights/hospitals

https://www.gov.uk/government/statistics/national-flu-and-covid-19-surveillance-reports-2024-to-2022-season

⁵¹ https://twitter.com/apsmunro/status/1486741875721744387?s=21

Finland

(population 5.5 million)

PHSM ⁵²	Schools & mitigation ⁵³	Vaccination coverage ⁵⁴			
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 & 5-11y in late Dec 2021.	Age group 1st dose 2nd dose 3rd/booster (years) (%) (%) (%) 12+ 86.7 83.6 50.4 12-15 76.1 68.9 0.4 16-19 83.6 77.8 8.8 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 ^{55,56}	Hospitalisations in children ⁵⁷	Deaths by age group ⁵⁸			
Finance: 14-day age-specific COVID-19 case notification rate	Hospitalisations by age group (14-day average): Gravid-19-tartumas vapida distributions apagination variodesantial plantificant michaesterious septiments in the control of the control o	Deaths by age group (for the whole period) 1,500 1,000			







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https://valtioneuvosto.fi/en/information-on-coronavirus/current-restrictions
https://valtioneuvosto.fi/en/information-on-coronavirus/current-restrictions
https://sampo.thl.fi/pivot/prod/en/vaccreg/cov19cov/summary_cov19ageareacov
https://sampo.thl.fi/pivot/prod/en/vaccreg/cov19cov/summary_cov19ageareacov
https://chl.fi/fi/web/infektiotaudit-ja-rokotukset/ajankohtaista/ajankohtaista-koronaviruksesta-covid-19/tilannekatsaus-koronaviruksesta/koronaviruksen-seuranta
https://covid19-country-overviews.ecdc.europa.eu/countries/Finland.html
https://covid19-country-overviews.ecdc.europa.eu/countries/Finland.html
https://covid19-country-overviews.ecdc.europa.eu/countries/Finland.html
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https://thl.fi/fi/web/infektiotaudit-ja-rokotukset/ajankohtaista/ajankohtaista-koronaviruksesta-covid-19/tilannekatsaus-koronaviruksesta/koronaviruksen-seuranta
https://thl.fi/fi/web/infektiotaudit-ja-rokotukset/ajankohtaista/ajankohtaista-koronaviruksesta-covid-19/tilannekatsaus-koronaviruksesta/koronaviruksen-seuranta

Netherlands

(population 17.4 million)

PHSM⁶⁰ Vaccination coverage 62 Schools & mitigation 61 3rd/booster Age group 1st dose Fully vacc. Closed for winter holidays in late Dec 2021 and returned to Work from home default, household visitor limits, recommendation to perform self-test before visiting others or school in early Jan 2022. (years) (%) (%) (%) public places, mask wearing required in indoors, all public 12-17 69.0 67.0 venues open with time and density limits, TTIO. Standard PHSM, mask wearing required for secondary school 18+ 89.2 86.2 57.3 staff and students, twice-weekly RAT screening for staff and *Note: The Netherlands also uses the J&J/Janssen vaccine which secondary school students, ventilation, quarantine is a single-dose vaccine. arrangements based on case numbers within a cohort, Third/booster dose available for all 18y+. Vaccination coverage vaccination of 12-17y commenced early July 2021 & 5-11y data for children 5-11v is not available. commenced mid-Jan 2022. Infections by age group 63 Hospitalisations in children 64 Deaths by age group 65 Distribution of age groups in the Netherlands - 0.9 - 10.19 - 20.29 - 30.39 - 40.49 - 50.59 - 60.69 - 70.79 - 80.89 - 90+ Deaths by age group - 0-19 - 20-29 - 30-39 - 40-49 - 50-59 - 60-69 - 70-79 - 80-89 - 90+ -- All age groups Data for recent days is incomplete due to reporting delay. * This value is larger than shown in the graph Value of Sunday, 30 January - Source: RIVM Genomic surveillance⁶⁶ The number of deaths in children is not known as the Netherlands Inschatting aandeel B.1.1.7 (alpha), B.1.351 (beta), P.1 (gamma), B.1.617.2 (delta) en B.1.1.529 (omicron) provides a total sum of all deaths between 0-49 years. modelinschatting (95% pred.int.) 🔸 alpha 🔖 beta 🌞 gamma 🐳 delta 💠 omicron 🗼 data kiemsurveillance (95% betrint.







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 $[\]frac{1}{2} + \frac{1}{2} + \frac{1}$

https://www.rivm.nl/en/coronavirus-covid-19/children-and-covid-19

https://coronadashboard.government.nl/landelijk/vaccinaties

https://coronadashboard.government.nl/landelijk/positief-geteste-mensen

⁶⁴ https://coronadashboard.government.nl/landelijk/ziekenhuis-opnames

⁶⁵ https://coronadashboard.government.nl/landelijk/sterfte

https://www.rivm.nl/en/coronavirus-covid-19/virus/variants

Scotland, UK

PHSM⁶⁷

(population 5.5 million)

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.

From 24 Jan 2022, restrictions eased including removal of density limits and household visitor limits. Hybrid work arrangements introduced.

Schools & mitigation 68

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

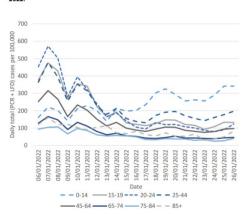
Standard PHSM, cohorting, mask wearing recommended for adults and students from year 7 onwards, twice-weekly RAT screening for staff and secondary school students, vaccination of 16-17y commenced mid-Aug & 12-15y commenced mid-Sep 2021 (initially as single dose). Close contacts who are fully vaccinated or under 18.5y and produce a negative PCR test result do not need to isolate.

Vaccination coverage 69 2nd dose Age group 1st dose 3rd/booster (years) (%) (%) (%) 12+ 92.2 86.2 68.8 0.9 12-15 68.2 34.8 16-17 82.5 54.4 9.6

Third/booster dose available for all 18y+ and other high-risk groups. Vaccination is recommended for children aged 5-11 years who are immunocompromised.

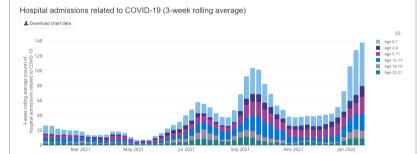
Infections by age group 70

Figure 6: Daily total combined PCR and LFD cases per 100,000 population in Scotland by age group, by reporting date²³. Data from 6 January to 26 January 2022



Omicron is responsible for >90% of cases in Scotland as of 10 Jan 2022.

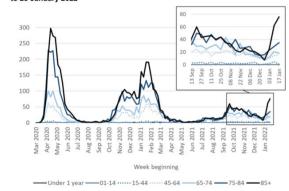
Hospitalisations in children⁷¹



Any admitted child who is COVID-19 positive is included, so this overestimates the number of children being admitted and needing treatment for COVID-19.

Deaths by age group 72,73

Figure 11: Deaths by age group (weekly total by week beginning, NRS), data up to 23 January 2022



There have been 2 deaths due to COVID-19 in children aged 0-14y in the past year.







⁶⁷ 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=nation&areaName=Scotland

https://www.gov.scot/collections/coronavirus-covid-19-the-state-of-the-epidemic/

https://scotland.shinyapps.io/phs-covid19-education/_w_852fb58e/
 https://www.gov.scot/collections/coronavirus-covid-19-the-state-of-the-epidemic/

¹⁸ 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)

PHSM⁷⁴

Restrictions re-introduced in late Sep 2021 after temporary easing. $\hspace{-0.5cm}$

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 75

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

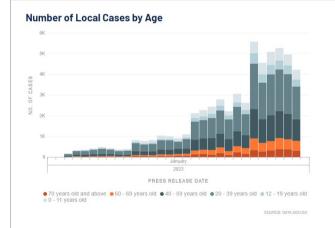
Standard PHSM, cohorting, RAT & temperature screening, mandatory masks 6y+ with exceptions, vaccination of 12y+ commenced early Jun 2021 and 5-11y in late Dec 2021.

Vaccination coverage $\frac{76}{}$

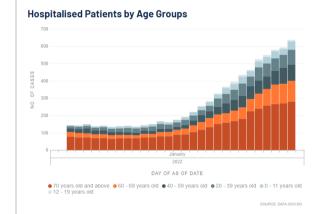
Age group	1st dose	2 nd dose	3 rd /booster
(years)	(%)	(%)	(%)
Total pop.	91.0	88.0	58.0

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 77



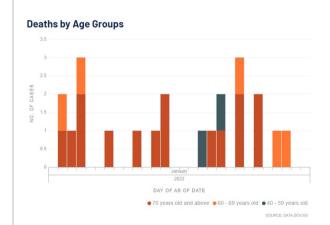
Hospitalisations in children 78



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

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

Deaths by age group 79



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







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

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

⁷⁶ https://www.moh.gov.sg/

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

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

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South Africa

(population 60.4 million)

PHSM⁸⁰

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 81,82

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 83

Age group Fully

(years) vaccinated* (%)

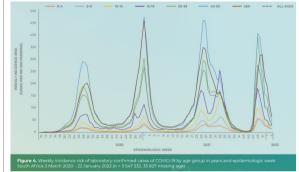
18+ 46.5

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

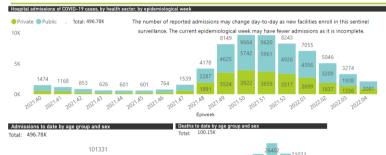
Vaccination is available for all aged 12y+. Coverage data for 12-17y not available.

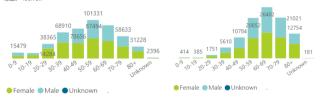
Infections by age group 84



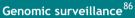


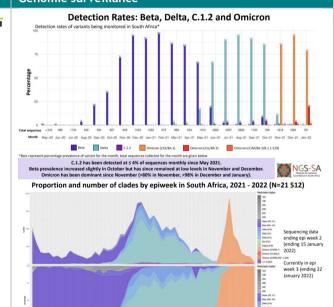
Hospitalisations in children and deaths by age group 85





Total of 799 deaths with COVID-19 in children 0-19y throughout the entire pandemic. Deaths in children account for <1% of all deaths in South Africa.





Delta dominated in South Africa until October at >80%. Omicron dominated November and December at >95%.





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

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

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

⁸³ https://sacoronavirus.co.za/latest-vaccine-statistics/

⁸⁴ https://www.nicd.ac.za/diseases-a-z-index/disease-index-covid-19/surveillance-reports/weekly-epidemiological-brief/

https://www.nicd.ac.za/diseases-az-index/disease-index-covid-19/surveillance-reports/daily-hospital-surveillance-datcov-report/

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 ⁸⁷	Schools & mitigation 88	Vaccination (coverage ^{89,91}	J		
The US CDC recommends indoor mask wearing for all unvaccinated and aged 2y+, physical	Closed for winter holidays in late Dec 2021 and reopened from early Jan 2022.	Age group (years)	1 st dose (%)	Fully vaccinated* (%)	3 rd /booster (%)	*Note: The US also uses the J&J/Janssen vaccine which is a single-dose vaccine.
distancing, hand & surface hygiene, TTIQ, but adoption varies by State/Territory.	Standard PHSM, cohorting, masks, PCR &	5-11	30.3	21.4	-	Third/booster dose for 65y+ and other high-risk individuals from Sep
	RAT screening, vaccination commenced mid-May for 12+y and early Nov 2021 for	12-17	66.1	55.9	-	2021, expanded to all 18y+ from late Nov 2021.
	5-11y, but adoption varies by State.	18+	86.9	74.1	44.6	
Infections by age group 91	MIS-C ⁹²	Deaths by ag	e group 93,94		Genomic surve	eillance ⁹⁵
COVID-19 Weekly Cases per 100,000 Population by Age Group, United States March 01, 2020 - January 29, 2022* App 87, 2027*	Daily MIS-C Cases and COVID-19 Cases Reported to CDC (7-Day Moving Average)	COVID-19 Weekly Deaths po	er 100,000 Population by Ag th 01, 2020 - January 29, 2022*	e Group, United States	United States: 10/17/20	921 – 1/22/2022 United States: 1/16/2022 – 1/22/2022 NOWCAST
Age Group 0 - 4	MIS-C Patients By Age Group	100 000 100 100 100 100 100 100 100 100		n children 0-17y		USA VERO LIAN Lineage 2 10 Class Nihed 59N/N
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.	Note: Data has not been updated since Report #5 (10 Jan 2022) 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.	of all deaths in the There is marked fatality rates are majority of State	he US. variation by Stat between 0-0.01 s and Territories 2); Arizona (n=56); Puerto Rico (n	% for the vast %; ;; California (n=47);	Omicron is now res	ponsible for >99% of all infections in









⁸⁷ https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html
88 https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/k-12-guidance.html
89 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://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://www.aap.org/en/pages/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 (pop. 1.1 million)			TENNESSEE (pop. 6.8 million)			CALIFORNIA (pop. 39.5 million)		
7-day incidence per 100,000 population ⁹⁸	1563			1594			1628		
PHSM	Mask wearing encouraged, physical distancing, $\ensuremath{TTIQ^{99}}$			Mask wearing encouraged, physical distancing, TTIQ ¹⁰⁰			Indoor mask wearing mandatory in many indoor venues for all aged 2+, TTIQ ¹⁰¹		
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. 102			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. 103			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. 104		
Vaccination coverage ¹⁰⁵			Fully vacc.* (%) 16.5 41.9 58.2 91.8 cine which is a single-dose ster dose coverage not	Age group (years) 5-11 12-17 18-64 65+	1 st dose (%) 16.2 43.7 67.2 97.1	Fully vacc.* (%) 11.6 36.5 57.9 88.6	Age group (years) 5-11 12-17 18-64 65+	1 st dose (%) 36.0 78.3 89.2 99.9	Fully vacc.* (%) 25.8 68.1 77.1 93.9







https://covid.cdc.gov/covid-data-tracker/#cases_casesper100klast7days

https://covid19.mt.gov/index

https://covid19.tn.gov/prevention/

https://covid19.ca.gov/masks-and-ope/

https://ophhs.mt.gov/publichealth/cdepi/diseases/CoronavirusMT/index

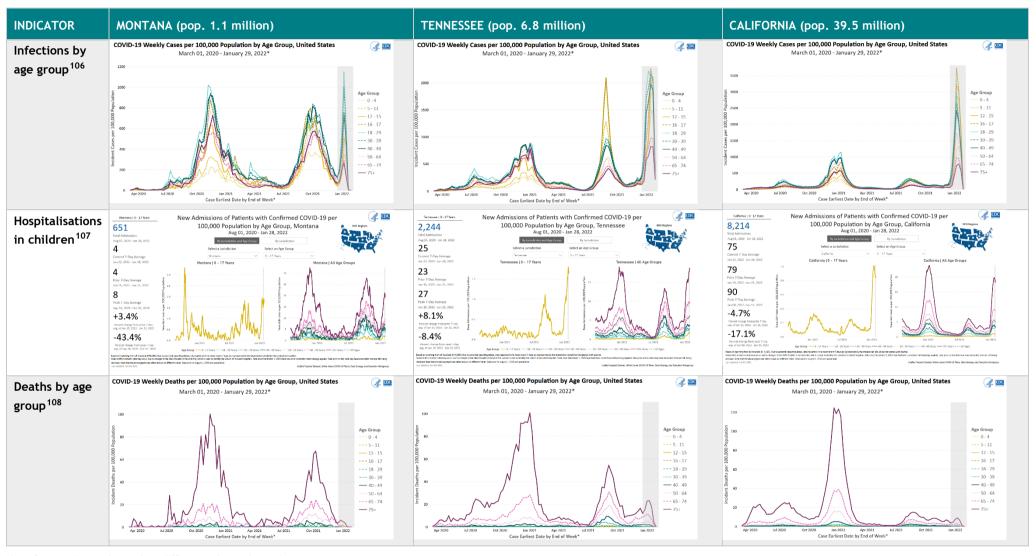
https://www.tn.gov/health/cdepi/cdepi/diseases/CoronavirusMT/index

https://www.tn.gov/health/cdepi/cov/educational-resources.html

https://www.tn.gov/programs/CID/DCDC/Pages/COVID-19/K-12-Guidance-2021-22-School-Year.aspx

https://www.mangorline.org/comonavirus-covid-19/yacrine-tracker

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



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

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





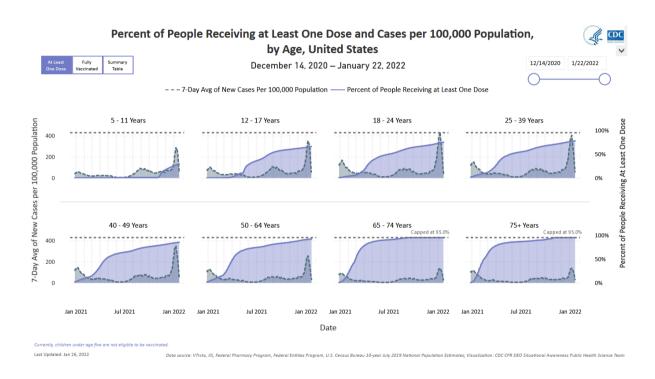


¹⁰⁶ https://covid.cdc.gov/covid-data-tracker/#demographicsovertime

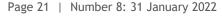
thtps://covid.cdc.gov/covid-data-tracker/#new-hospital-admissions

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. 109



¹⁰⁹ https://covid.cdc.gov/covid-data-tracker/#vaccinations-cases-trends











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





