COS30045 Data Visualisation

COVID-19 Health Impacts in Australia

Assignment 3A: Project standup 2 submission point

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Data Collection (Processing & Cleaning):

	A	B
1	Measure Name	Value
2	National - Total vaccine doses administered	27,750,501
3	National - Daily increase - Total vaccine doses recorded	308,805
4	National - Number of people 16 and over with 1 dose	16,052,198
5	National - Number of people 16 and over fully vaccinated	11,176,598
6	National - Population 16 and over	20,619,959
7	ACT - Administration state - Total vaccine doses administered	677,600
8	NSW - Administration state - Total vaccine doses administered	10,077,159
9	NT - Administration state - Total vaccine doses administered	270,366
10	QLD - Administration state - Total vaccine doses administered	4,778,597
11	SA - Administration state - Total vaccine doses administered	1,705,268
12	TAS - Administration state - Total vaccine doses administered	596,061
13	VIC - Administration state - Total vaccine doses administered	7,248,276
14	WA - Administration state - Total vaccine doses administered	2,397,174
15	ACT - Administration state - Daily increase doses recorded	6,149
16	NSW - Administration state - Daily increase doses recorded	114,338
17	NT - Administration state - Daily increase doses recorded	2,292
18	QLD - Administration state - Daily increase doses recorded	51,838
19	SA - Administration state - Daily increase doses recorded	18,140
20	TAS - Administration state - Daily increase doses recorded	4,803
21	VIC - Administration state - Daily increase doses recorded	84,711
22	WA - Administration state - Daily increase doses recorded	26,534
23	National - Administration state - Total doses administered state and territory facilities	11,744,471
24	ACT - Administration state - Total doses administered state and territory facilities	328,411
25	NSW - Administration state - Total doses administered state and territory facilities	3,546,060
26	NT - Administration state - Total doses administered state and territory facilities	163,358
27	QLD - Administration state - Total doses administered state and territory facilities	1,947,115
28	SA - Administration state - Total doses administered state and territory facilities	780,763
25	TAS - Administration state - Total doses administered state and territory facilities	328,606
30	VIC - Administration state - Total doses administered state and territory facilities	3,483,015
31	WA - Administration state - Total doses administered state and territory facilities	1,167,143
32	National - Administration state - Daily increase doses administered state and territory facilities	107,772
33	ACT - Administration state - Daily increase doses administered state and territory facilities	2,727
34	NSW - Administration state - Daily increase doses administered state and territory facilities	27,637
35	NT - Administration state - Daily increase doses administered state and territory facilities	1,375
36	QLD - Administration state - Daily increase doses administered state and territory facilities	20,554
37	SA - Administration state - Daily increase doses administered state and territory facilities	8,561
38	TAS - Administration state - Daily increase doses administered state and territory facilities	3,047
39	VIC - Administration state - Daily increase doses administered state and territory facilities	32,717
40	WA - Administration state - Daily increase doses administered state and territory facilities	11,154

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	A	B	C	D	E	F	G	H	I	J	K	L
		Health expenditure and financing										
		Frequency of observation: Annual										
		Measure: Expenditure										
		Time period			2019	2020	2021	2022	2023	2024		
		Reference area	Combined unit of measure									
		Price base: Constant prices										
		Australia	Millions, 2020		205,978.6	223,250.6	237,768.0	232,099.9	E 230,365.1	E 243,795.0		
		Austria	Millions, 2020		42,971.0	43,405.4	48,536.8	46,064.5	44,913.3	P 46,655.0		
		Belgium	Millions, 2020		52,810.2	53,157.6	55,582.7	53,965.4	54,501.3	E 56,079.3		
		Canada	Millions, 2020		259,793.1	D 289,053.3	D 305,819.8	D 292,665.7	293,505.5	P 300,561.1		
		Chile	Millions, 2020		19,527,962.4	19,516,658.9	22,722,968.2	23,522,319.6	23,845,269.3	P 25,895,579.3		
		Colombia	Millions, 2020		84,964,633.7	86,842,140.2	102,260,904.6	93,058,414.9	100,293,344.6	P 101,829,738.4		
		Costa Rica	Millions, 2020		2,752,559.0	2,855,920.0	2,980,810.8	2,877,219.9	2,875,327.7	E 2,970,715.5		
		Czechia	Millions, 2020		456,936.7	522,797.7	553,236.5	510,686.7	510,751.3	P 526,027.5		
		Denmark	Millions, 2020		239,035.3	248,768.0	268,655.2	248,924.7	240,316.4	P 245,216.3		
		Estonia	Millions, 2020									

Table Overview +

We have started the process of data cleaning and changing any inconsistencies which are not needed; therefore, our visualisations are much more consistent. We are ensuring to use Data from the Australian bracket only to showcase the expenditure cost between years (2019 - 2022) or (2019 - 2024). We reckon using data between (2019 - 2022) as those years are most consistent with the Covid 19 pandemic in Australia.

Process Book Update:

COS30045 Data Visualization

COVID-19 Health Impacts in Australia

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1. Introduction

Background and Motivation:

With the COVID-19 pandemic, there have also been notable influences on the healthcare system, the people, and the various strategies employed by the country's administration. Apart from the numbers, there have also been challenges, including the outcomes on the country's mortality rates, vaccination, and the overall impact on the various states and territories within the country.

The rationale for this project is to convert the complicated datasets relating to COVID-19 cases into interactive visuals, enabling users to explore the trends over time and compare the results across different regions. The project also aims to provide key information through interactive visuals, allowing different stakeholders, including students, policymakers, and the public, to understand the information better.

Purpose of the Visualisation:

The goal of this visualization project was to provide the means for users to have an interactive experience that allows them to explore the effects of COVID-19 in Australia, with an emphasis on the trends in deaths and vaccination progress at the state level. The intent behind this visualization is to allow for comparisons, to show trends across time, and most importantly, to allow for users to interpret the data using an analytical approach as opposed to simply presenting the data in a static manner.

At this stage of the project, the planned visualisations aim to answer the following key questions:

- How did COVID-19 death counts vary across Australian states over time?
- How did vaccination rollout progress differ between states?
- Are there observable relationships between vaccination uptake and mortality trends?
- Which regions experienced the greatest overall impact during the pandemic period?

2. Data (Initial Overview)

Data Sources:

The project uses publicly available Australian COVID-19 data sourced from official government agencies, including:

- COVID-19 mortality data by state and year
- COVID-19 vaccination rollout data by state and year

The data sets used for analysis were selected based on confidence in their quality, being representational of the population across the country and their ability to contribute towards understanding the impact of health indicators on the Australian public health system.

Initial Data Processing:

To bring consistency to these data sets, all of the data sets have previously undergone a review and cleaning process which involved standardising date formats from year to year across states, eliminating unused attributes in the datasets, and converting the data sets into a format that will be suitable for the development of interactive, web-based visualisations with JavaScript libraries (D3.js).

As visualisations are developed and put through the testing phase, additional work will be undertaken to further refine and validate the development of the data sets.

List of What We Have Done Since the Last Stand-up (Stand-up 1)

Following the completion of Project Stand-Up 1, we have successfully:

• Identified and located the appropriately sourced Australian COVID-19 data relating specifically to the number of Deaths and Vaccination rates.

• Understood the structure/limitations/appropriateness of the dataset for the future visualisation.

• Completed cleaning/preparation of these datasets by converting to Standard date format, aligning inconsistent State Names, and ensuring consistency across Data Types.

• Supported early-stage visualisation planning, such as which Chart Types and interactive components to use.

• Commenced the creation of the Process Book by drafting the Introductory and Data sections outlining the source of the Dataset, the reason for its selection, and what was done to pre-process the Dataset.

• Researched and started building a JavaScript 'loader' for the Datasets and a sample skeleton for future visualisations.

• Assisted in establishing an initial website structure that can accommodate future visualisation integrations.

Contribution So Far:

Area	Estimated Time	% of Team Work Completed So far
Finding and working with the dataset	~3 Hours	~30%
Designing the visualisation	~4 Hours	~25%
Contributing to the process book (Assignment 3B)	~3 Hours	~25%
Coding	~6 Hours	~30%

Contributions are shared across the team, with responsibilities prioritised to ensure balanced progress.

Summary of Tasks to Be Completed Before the Next Meeting:

Before the next meeting, we plan to:

• Complete the process of validating the dataset and resolving all outstanding concerns regarding the dataset.

• Create fuller drafts for each of the planned visualisations.

• Further enhance the JavaScript code created to allow for interactivity as well as provide a way to include annotations within the visualisations.

• Include in the process book a rationale for the design, as well as include images of early versions of my visualisations.

• Continue working on embedding visualisations into the overall visual layout of our website.

Issues With Teamwork:

There are currently no issues with teamwork. Our Teamwork continues to function very well at present. There is consistency in how we communicate, work tasks are well defined, and we both work progressively. We both can both easily determine and show the impact of each other's contributions through regular meetings and shared documentation.

Progress on Assignment 3C: Website and Visualisation (Brief):

- The initial website structure has been established.
- Early visualisation prototypes are being developed and tested.
- The plan is to keep tweaking things. We'll be focusing on smoother integration and polishing the details in the next few phases.

Appendix:

https://www.oecd.org/content/oecd/en/search/data.html?q=health&orderBy=mostRelevant&page=0&facetTags=oecd-languages%3Aen

https://www.health.gov.au/resources/collections/covid-19-vaccination-vaccination-data?language=en

https://data-explorer.oecd.org/vis?tm=health%20spending&pg=0&hc[Measure]=Expenditure&snb=76&vw=ov&df[ds]=dsDisseminateFinalDMZ&df[id]=DSD_SHA%40DF_SHA&df[ag]=OECD.ELS.HD&df[vs]=1.0&pd=2019%2C2022&dq=.A.EXP_HEALTH.PT_B1GQ._T.._T.._T...&ly[rw]=REF_AREA&ly[cl]=TIME_PERIOD&to[TIME_PERIOD]=false

https://www.abs.gov.au/articles/covid-19-mortality-australia-deaths-registered-until-31-january-2024

https://data-explorer.oecd.org/vis?lc=en&df[ds]=dsDisseminateFinalDMZ&df[id]=DSD_HEALTH_MORTALITY%40DF_MORTALITY_COVID&df[ag]=OECD.ELS.HD&dq=.W.MCVD19._T._T.&pd=2023-W01%2C&to[TIME_PERIOD]=false

https://data-explorer.oecd.org/vis?df[ds]=DisseminateFinalDMZ&df[id]=DSD_SHA%40DF_SHA&df[ag]=OECD.ELS.HD&dq=.A.EXP_HEALTH.XDC._T.._T.._T...&pd=2019%2C2024&to[TIME_PERIOD]=false&vw=tb