

## Ideas

1. Population density Choropleth + hospital locations overlaid

2. SEIFA MAP

3. Number of Hospitals by state bar chart

4. scatter plot

5. Trend in hospital wait times line chart

Sheet 1 Name: Virani Date: 09/10/2025

7. Network Graph: Patient Flow/Referrals Between Hospitals

8. Boxplot: distribution of ambulance response times across regions

6. Public vs Private Hospitals Breakdown by region

9. Ambulance response time: median & 90th percentile

## Filter

⑤ & ⑦ Lack of data for them

⑦ could turn out a lot more complex than wanted, it can also be confusing for users to interpret

Between ⑧ & ⑨, ⑨ could look cleaner & easier to digest as the lollipop dots can be simply explained. Whilst interpreting boxplot is not as straightforward. I will go with ⑨ for ambulance response times.

## Categorise

General Access: Choropleth (population density + hospital locations) ①

### Questions

- SEIFA map ②
- hospitals per # people per state (general comparison) ③
- hospital density & SEIFA score in Victoria ④

### Detailed Access

### Questions/Topics

- ambulance response times by Local Government Area (LGA) ⑨
- Public vs private hospitals breakdown by SA3/LGA ⑥

### (Region specific)

## Combine & Refine

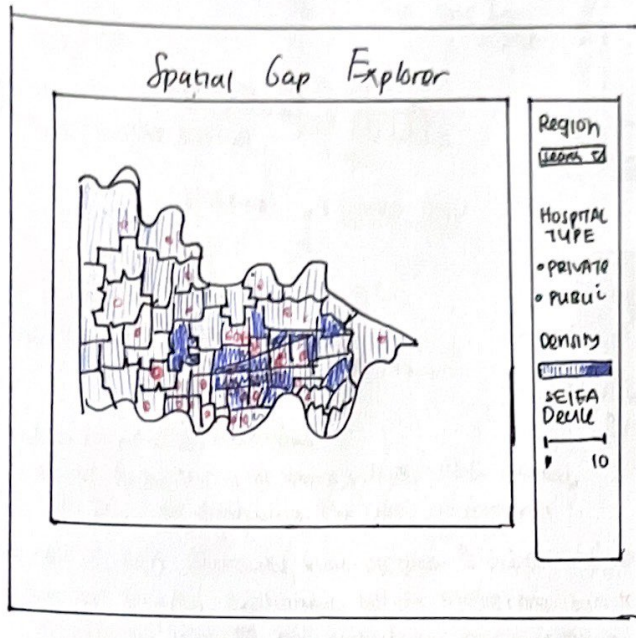
Core Visuals: Choropleth (Population + hospitals), SEIFA map, Bar Chart (regional comparison) and Scatter (inequality)

Supplemental: ✓ Pie Chart (public vs private hospitals breakdown), Lollipop Chart (ambulance response time)

## Summarise and question

- Do these provide a comprehensive view for policymakers & public about healthcare access and equity in Victoria?
- Will they narrate a clear, insightful story? Are they intuitive visual forms?
- Feasibility with Vega/Vega-Lite tools?





Parti / Focus

### Spatial Gap Explorer

Main Essence: Reveal if hospitals are located where population clusters are highest, and highlight underserved Local Government Areas.

Purpose: help users quickly identify which areas in Victoria are better serviced relative to population clusters, and vice versa.

Sheet 2,3,4

Name Virani Aboston

Date 09/10/2025

Title Spatial Gap Explorer

Description Maps population densities & hospital locations, highlighting gaps in health care service across Victoria

#### Components / Operations

- Map Panel: choropleth by density
- Overlay: Hospital points
- Sidebar: Region filter (Region V)
  - Hospital type filter
  - SEIFA Decile filter (from 1-10)
  - Density legend
- Tooltip: hover on hospital / region for information on the item
  - Hospital -> name, type
  - area -> population density, area name/code
- components: ① map
  - ② points
  - ③ sidebar
    - a. filters
    - b. legend

#### Pro & Cons

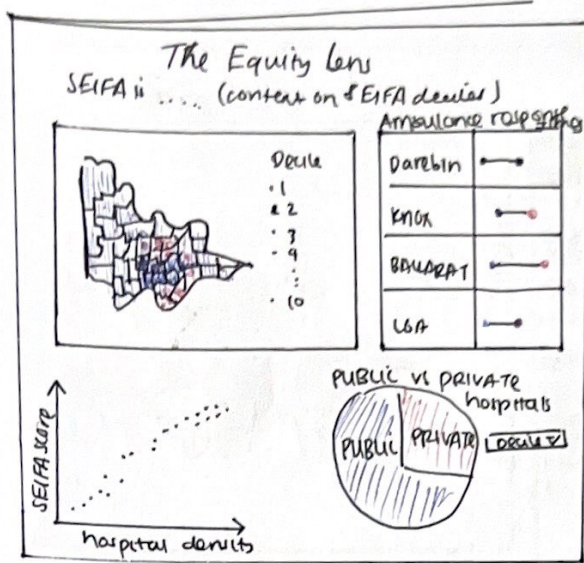
Pros: direct spatial equity display, intuitive for users

Cons: may lack context on ~~other~~ other non-spatial factors

lack storytelling

• combining all details / by idiom minimizes user engagement / interest





### Part / Focus

- The Equity Lens
- Main Essence: identify visually ~~which~~ which socially disadvantaged areas lack nearby hospital access
- Layered Vic's LGA regions with SEIFA decile, highlighting interplay of social disadvantage & hospital coverage.
- Encourages personalised exploration, increasing engagement & awareness around equity issues.

Sheet 2,3,4

Name Viani Abueta

Date 9/10/2025

Title Equity Lens

Description Visualises Victoria's socioeconomic disadvantage, showing hospital access gaps in vulnerable regions.

### Components / Operations

IO (only):

- SEIFA map, ambulance response time lollipop chart, hospital type breakdown pie chart, SEIFA score vs hospital density scatter plot / line chart

OVERLAY:

- hospital dots

Dropdown/FILTER:

- different decile scores (1-10)
- Can also affect the pie chart & lollipop chart
- e.g. user clicks on decile 5 on map legend → lollipop chart shows ambulance response times for decile 5 areas + average hospital type breakdown for the decile 5 areas

TODTip:

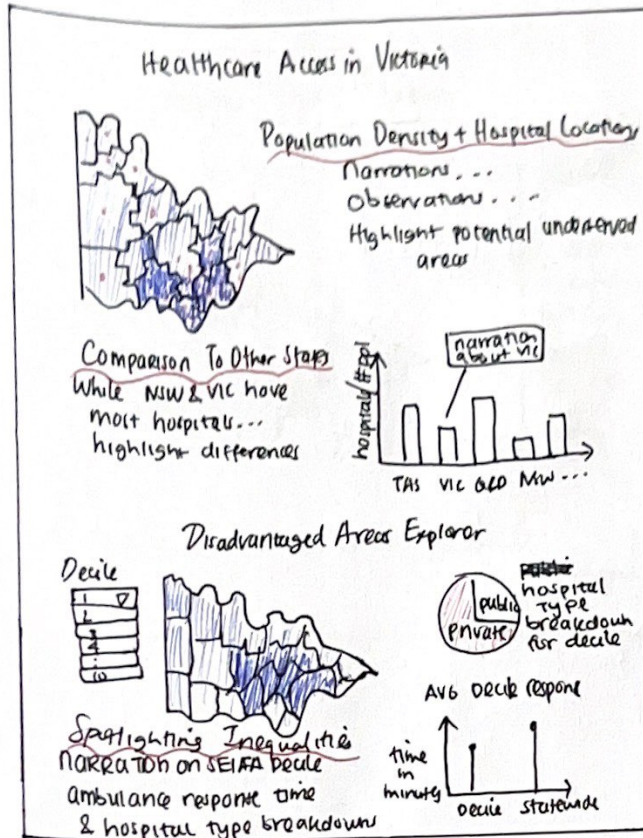
- Show SEIFA score

### Pro & Cons

Pros: reveals complex social equity issues not visible in pure spatial analysis

Cons: more for policy maker audience & less for public users  
(interpreting socioeconomic indexes)  
/ requires stronger assistive narrative for each idiom.





Part / Focus

Healthcare Access & Outcomes Narrative

Essence: Link geographic & social dimensions to healthcare outcome in a story-line progression.

- Allows users to follow trends in ambulance response times, hospital types in relation to SEIFA decile.
- Highlights key takeaways for gaps in healthcare delivery.

Sheet 2,3,4

Name Virani Aboetan

Date 9/10/2025

Title Access & Outcomes Storyline

Description A storyline dashboard linking where, who, and change over time for healthcare access in Victoria.

Components / Operations

- Choropleth Map: population density (normalised) + hospital location overlaid
- Bar chart: states comparison
- Choropleth map: SEIFA deciles in every local Government Area (LGA)
- Pie chart: hospital type breakdown in each decile on average
- Lollipop chart: average ambulance response time in the selected decile vs statewide

→ Narration: throughout the visualisation

- annotation: on bar chart & other charts to highlight observations

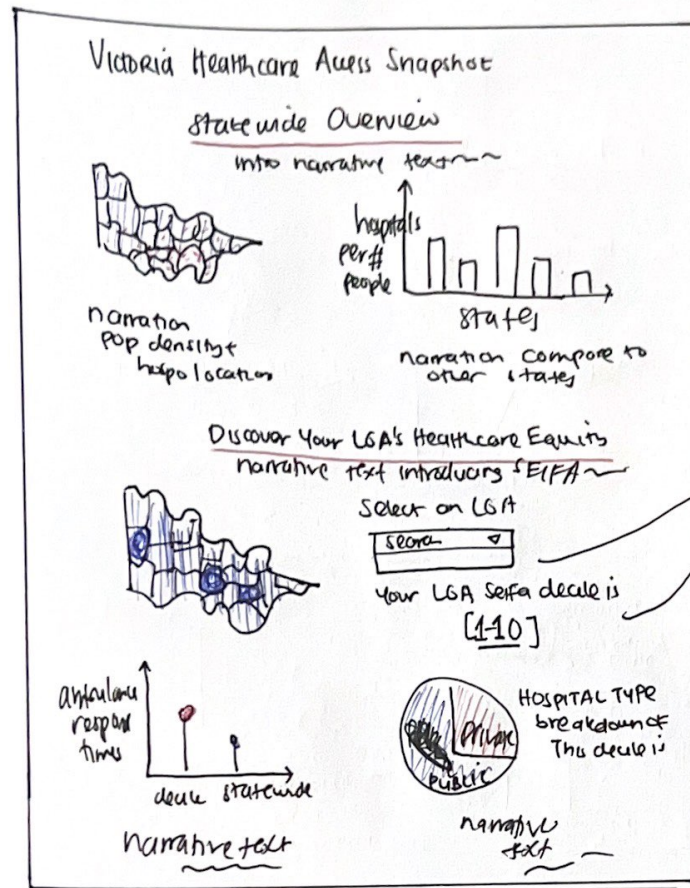
Pro & Cons

Pros: multi-faceted, blends statistical view with storytelling

Cons: Requires more data cleaning for aggregate decile data (pie charts, lollipop charts)

- Needs to balance narrative positioning with idioms to still appear cohesive & digestible for users





Parti / Focus

## "Victoria Healthcare Access Explorer/Snapshot"

Main essence:

- User-centred, insightful exposure on how hospital locations & admissions relate to population & disadvantage.
- ~~Intuitive~~ Intuitive & detailed tool ~~exploring~~ delivering a broad to localised view, enabling users from general audiences to experts to explore healthcare access in Victoria spatially and socially with clear metrics & interactive elements that promote personal relevance & policy insight.

Sheet 5

Name Virani Abueton

Date 10/10/2025

Title Victoria Healthcare Access Snapshot

Description

A comprehensive, interactive dashboard integrating spatial & socioeconomic factors with hospital access, ambulance, and comparison to other states data. This dashboard empowered policymakers & the public with clear insights on healthcare equity across Victoria.

Components / Operations

- Choropleth maps with overlays & filters
- Interactive dropdown/search for LGA selection
- Dynamic display of selected LGA SEIFA decile text
- Lollipop chart emphasising comparative ambulance response times.
- Pie chart of hospital type
- Narrative text blocks tied to current data views & most of idiom
- Clear tooltips for each idiom

Details

Data Sources: • ABS :: census data (pop. densities)

- LGA boundaries
- SEIFA scores & deciles

• MyHospitals API: hospital locations, names

• Vic. Agency for Health Information (VAHI): ambulance response times by LGA

Technical Approach: Vega & Vega-Lite for interactive maps & charts, Vega-Embed to integrate the charts into a webpage.

Priorities: narrative-driven design, responsiveness, accessibility

Estimated time: 2-3 weeks including refinement