



CARE ON CALL

CARE BEYOND CITY LIMITS

Happy Health
Co.





Executive Summary

Problem
Statement

How can we efficiently provide quality healthcare services in remote/rural regions in Australia?

Strategy

Increased focus on preventative care with self-serviced kiosks

Use of AI in diagnosis, management, and assistance

Impact

Reduced burden on hospitals

improve health care outcomes

Better cost savings

Reducing health gap caused by remoteness

Risks

Privacy

Misdisagnosis

Bias & Fairness



Remote areas have almost twice the rate of hospitalisation than in Major Cities

lack of early
diagnosis



260%

The rate of potentially preventable hospitalisations in Very Remote areas than in major cities. (ABS, 2022)

140%

The rate of total burden in Remote and Very Remote areas when compared to major cities. (ABS, 2022)

inefficient
resource
allocation





Shifting focus towards preventative healthcare



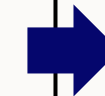
Too Far - Over **65 000** people have no access to GP within an hour's drive from their home
“Only when urgent” Mindset



Greater out of pocket costs including financial costs of parking and travel and time cost



Lack of awareness of disease risk



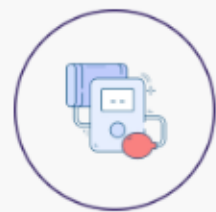
50% less GP visits causing disparity in early diagnosis and preventative health access





Self Service Health Kiosks is a accessible and convenient way to have regular health checkups

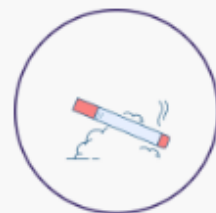
Run preliminary health checks and update the patient profile



Blood Pressure



Height



Smoking status



Heart Rate



Body Mass Index



Perceived Stress



Body Fat Percentage



Weight



Diabetes Risk



Targeting the leading causes of disease burden



Having voice recognition to detect levels of stress or emotional burden



Gp access that data in real time

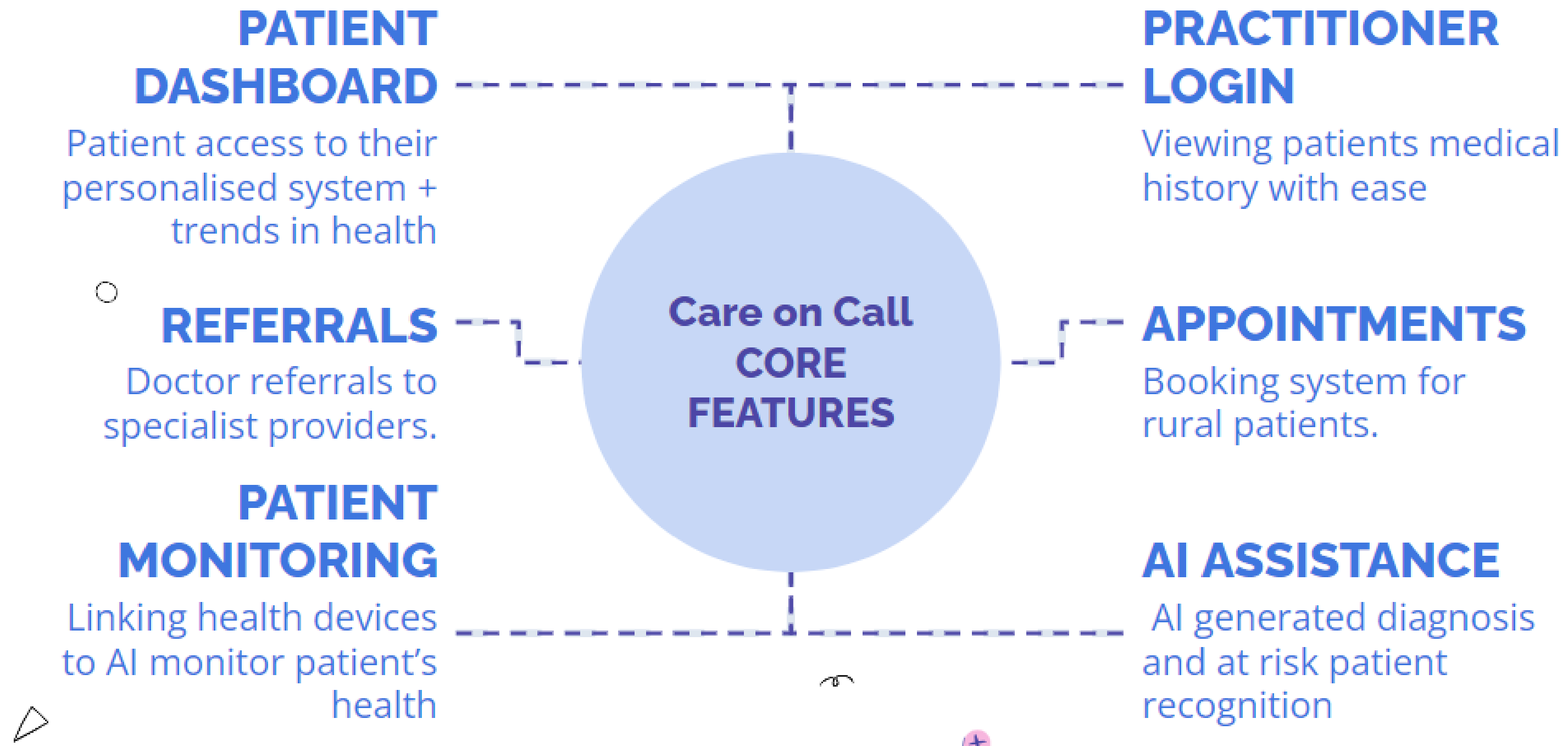


Automates the first stage of preliminary diagnosis to filter out patients





Holistic centralised system for all of the patients' health needs





Use AI technology to help with improving quality of healthcare and growth potentials

RECOGNISE RISKS

Using AI technology to recognise patients with high disease risk

RESOURCE ALLOCATION

Triage patients so prioritising risk patients

predict trends in population for better policies and money allocation

predictive analytics to help professionals anticipate patient admissions and reduce wait times



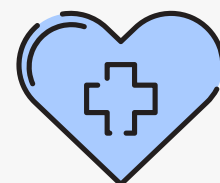
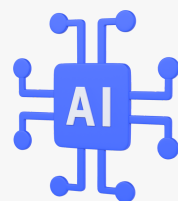
MONITORING

Tracking the patients health status and recovery progress with continuous feedback

DISEASE PREVENTION

Adding scans and genetic screening for other common diseases.

Use the data collected to enable proactive interventions and personalized preventive care with suggestions of lifestyle changes.

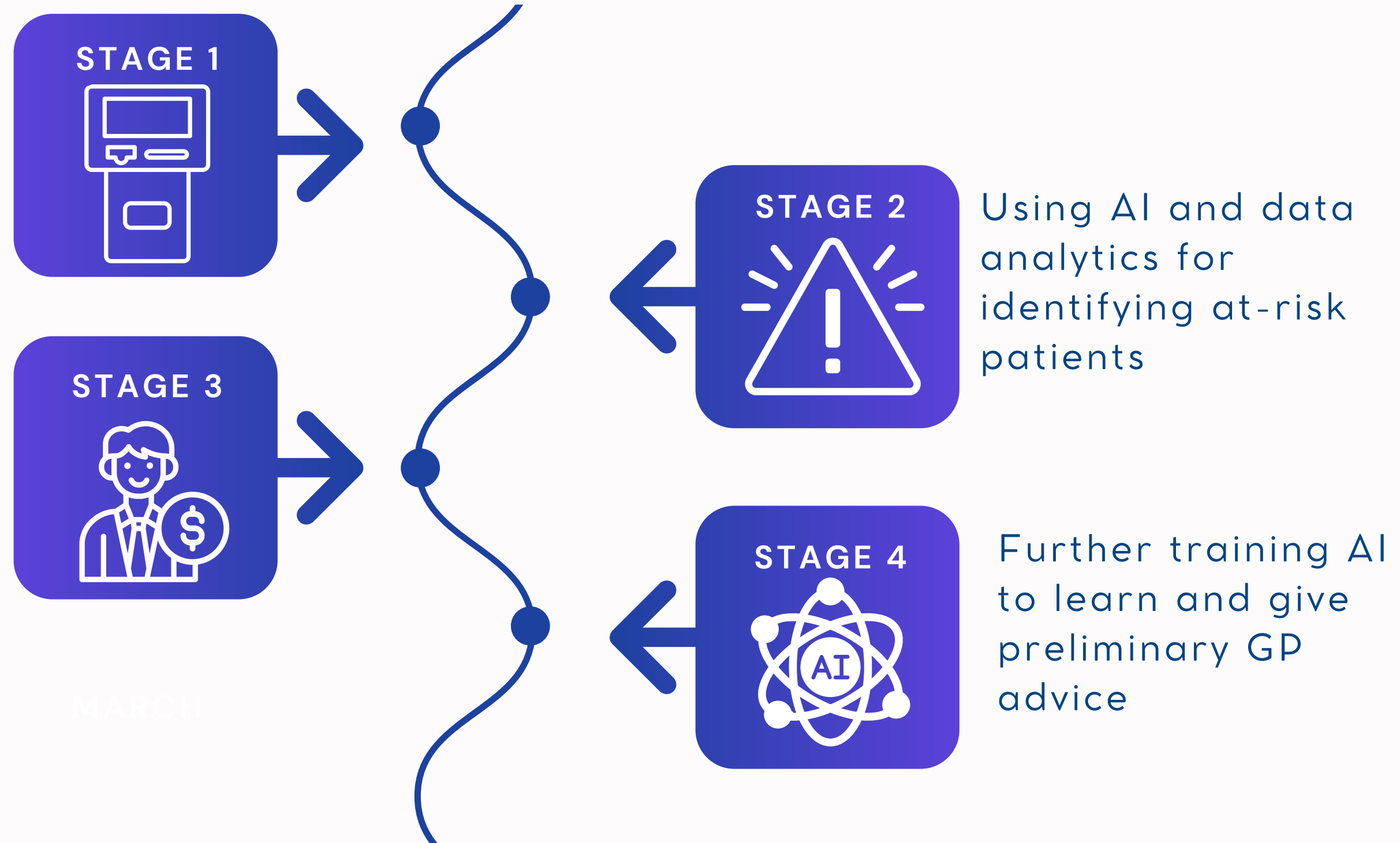




A staged implementation will provide structure and feedback for our healthcare model

Installing Kiosks in local pharmacies and other accessible areas.

Using tech and automation for personalised treatment plans





Growth potentials are limitless as technology develops

Improving resource allocation

Decreasing the rate of potentially preventable hospitalisations thus, hospital burden

Better health outcomes

Increasing health outcomes including life expectancy by reducing the health gaps caused by remoteness



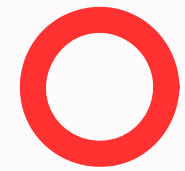
Operational Efficiency

Cost savings due to efficient resource allocation and increased focus on prevention

Wider Reach

Efficient resource allocation -> more resources directed to improving accessibility to high-risk patients.





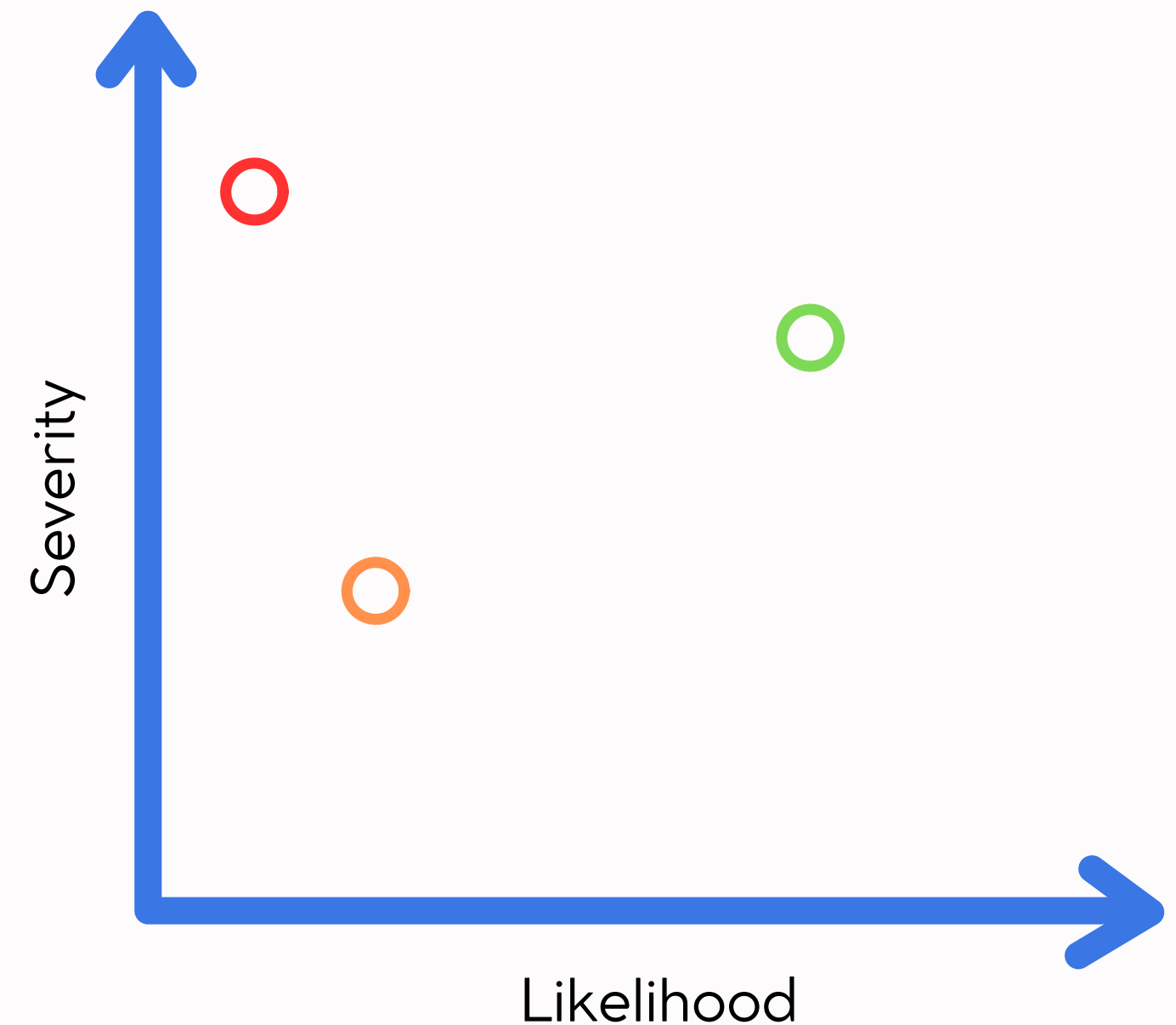
Data privacy and security issues



Misdiagnosis leading to inefficient use of resources



Bias and fairness due to bias in training data leading to disparities in disease detection between different demographics.





APPENDIX

Data included in the report shows the number of GP visits in very remote areas is half the rate in major cities (3.4 every year compared to 6.8 in 2020–21).

The report suggests that low GP access has a knock-on impact to allied health and medical sub-specialty services, as well as increasing hospital usage, which is notably higher – and more expensive – in more rural areas.

‘The scarcity of healthcare professionals, including doctors, dentists, pharmacists, and allied health professionals, poses a significant challenge to rural areas in meeting their healthcare needs,’ the authors wrote.

As well as the gap in GP access, the research draws on data showing a huge difference in the number of non-GP medical specialists, going down from 189.3 FTE per 100,000 in cities to 11.4 in small rural towns and 24.1 in very remote areas.

‘Patients often prioritise health issues based on their level of urgency, which creates a significant volition gap to early presentation and preventive health access, especially when service access is difficult,’ the report states.

‘This means that patients may only seek care when their conditions become more severe, leading to poorer health outcomes.

‘If service access is difficult, patients are incentivised to prioritise care only when it is urgent, creating a volition gap to early presentation and preventive health access.’

BY Royal Australian College of GP (RACGP)

https://www.bhi.nsw.gov.au/__data/assets/pdf_file/0005/339143/report-insights-Healthcare-in-rural-regional-and-remote-NSW.pdf

One important reason for unmet healthcare needs is **lack of affordability**. While financial coverage for most healthcare in Australia is delivered through publicly funded Medicare and private health insurance, there are gaps or charges that are bridged by individuals. These out-of-pocket costs – both for care and for associated outlays such as parking or travel – can be a financial burden and result in patients delaying or skipping needed healthcare.

In 2020, 17% of all deaths in Australia were potentially avoidable. For males and females, the rate increased with remoteness. After adjusting for age, the rates of potentially avoidable deaths were:

3.0 times as high for females in Very remote areas compared with females in Major cities (181 per 100,000 population compared with 61).

2.1 times as high for males in Very remote areas compared with males in Major cities (235 per 100,000 population compared with 111) (AIHW 2022b).

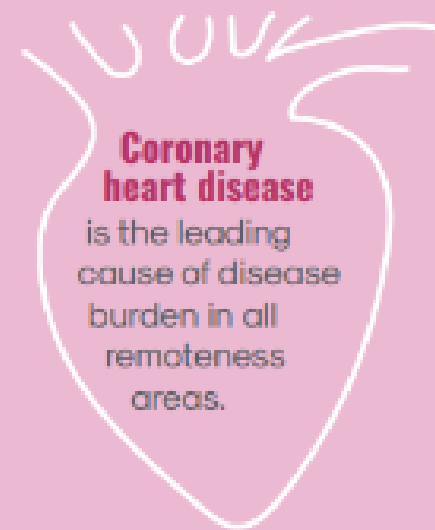
In 2019–20, people living in Very remote areas were hospitalised at almost twice the rate as people living in Major cities and those in Remote areas at 1.4 times the rate.

- Potentially preventable hospitalisations
 - Potentially preventable hospitalisations (PPH) are for conditions where hospitalisation could have potentially been prevented through the provision of appropriate individualised preventative health interventions and early disease management, usually delivered in primary care and community-based settings. When compared with Major cities, the rate of PPH in 2019–20 was:
 - 2.6 times as high for people living in Very remote areas
 - 1.8 times as high for people living in Remote areas
 - slightly higher in the Inner regional and Outer regional areas (1.1 and 1.3 times as high respectively) (AIHW 2021c).

Figure 4: Leading cause of death by remoteness area, with comparison mortality rates with Australia overall 2016–2020

	Major Cities	Inner Regional	Outer Regional	Remote	Very Remote
1	Coronary heart disease	Coronary heart disease	Coronary heart disease	Coronary heart disease	Coronary heart disease
2	Dementia including Alzheimer disease	Dementia including Alzheimer disease	Dementia including Alzheimer disease	Lung cancer	Diabetes
3	Cerebrovascular disease	Cerebrovascular disease	Lung cancer	Chronic obstructive pulmonary disease	Chronic obstructive pulmonary disease
4	Lung cancer	Lung cancer	Cerebrovascular disease	Dementia including Alzheimer disease	Lung cancer
5	Chronic obstructive pulmonary disease	Chronic obstructive pulmonary disease	Chronic obstructive pulmonary disease	Cerebrovascular disease	Suicide
6	Colorectal cancer	Colorectal cancer	Colorectal cancer	Diabetes	Cerebrovascular disease
7	Diabetes	Diabetes	Diabetes	Suicide	Land transport accidents
8	Influenza and pneumonia	Prostate cancer	Prostate cancer	Colorectal cancer	Dementia including Alzheimer disease
9	Heart failure	Heart failure	Suicide	Land transport accidents	Other ill-defined causes
10	Prostate cancer	Influenza and pneumonia	Heart failure	Prostate cancer	Kidney failure
Rate ratio (compared with all Australia)					

Leading causes of disease burden vary with remoteness³⁷



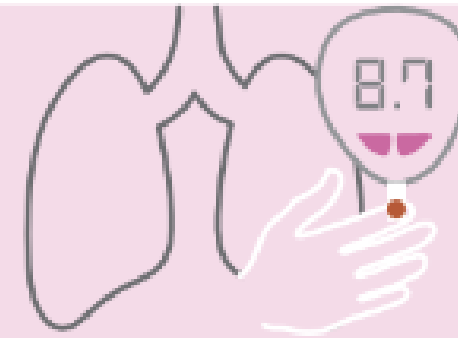
Coronary heart disease

is the leading cause of disease burden in all remoteness areas.

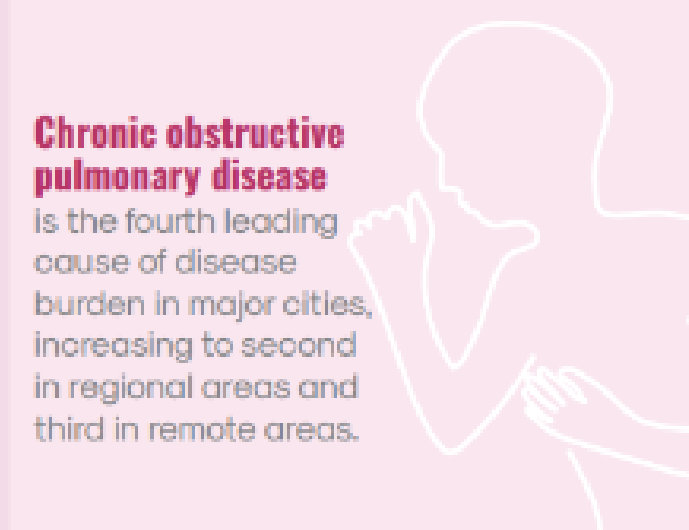


Suicide and self-inflicted injuries

rate more highly as a relative source of disease burden with increasing remoteness (eighth in major cities but second in remote areas).



Lung cancer increases in its relative disease burden with remoteness, as does **type 2 diabetes**.



Chronic obstructive pulmonary disease

is the fourth leading cause of disease burden in major cities, increasing to second in regional areas and third in remote areas.

Back pain and problems

become a lesser source of disease burden with remoteness, dropping from second in major cities to fifth in outer regional areas and fourth in remote areas.

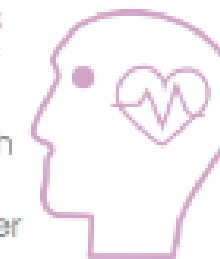


Dementia is the third leading cause of disease burden in major cities but drops to sixth in outer regional areas and then outside of the top ten in remote areas.



Anxiety and depressive disorders

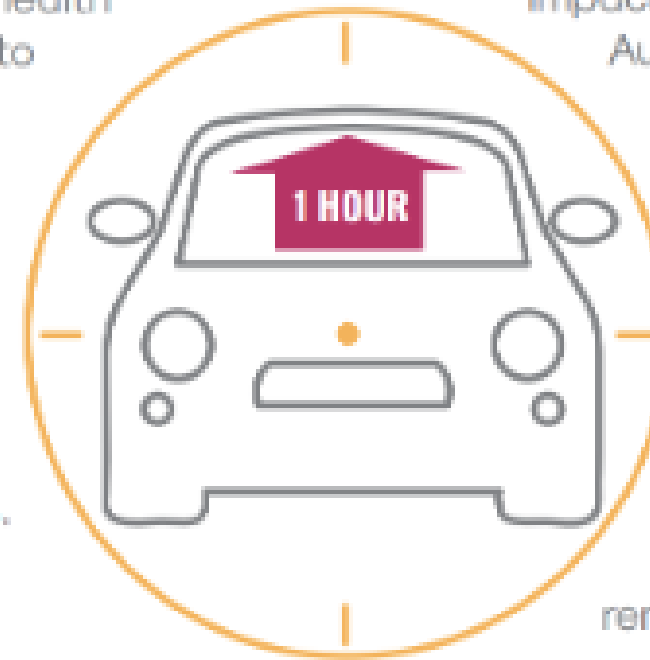
also become lesser sources of disease burden with remoteness, dropping from fifth and sixth respectively in major cities to ninth and tenth in inner regional areas and then not further rating within the top ten.



ACCESS TO HEALTH CARE SERVICES

Australians outside major cities are **three times more likely** to rate access to general, specialist and mental health services as poor.⁵⁴ They also utilise Medicare up to **40% less** than those in major cities.⁵⁵

Almost **43,000 Australians** have no access to any primary healthcare services within an hour's drive from their home (one way).⁵⁶ Within the same drive time, over **65,000 people** have no access to a GP, over **142,000 people** have no access to dental services, and almost **107,000 people** have no access to mental health services.



In addition to travel times and their associated personal impacts, other barriers to accessing health care in rural Australia include the cost of care, the non-existence of many health services, and reluctance to seek help for mental health services and non-urgent care.⁵⁶

The consequence of poorer access to primary health care in rural Australia is higher rates of potentially preventable hospitalisations (PPHs). Compared to major cities, the rate of PPHs is higher by **11%** in inner and **22%** in outer regional, **70%** in remote and **154%** in very remote areas.

Access to specialists, pharmaceuticals, allied health and aged care services are poorer in remote areas.

https://www.ruralhealth.org.au/sites/default/files/NRHA_Rural_health_in_Australia_snapshot.pdf