

# Republic of Fiji

## Hospital & Health Service

### Review

October 2017

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# Outline

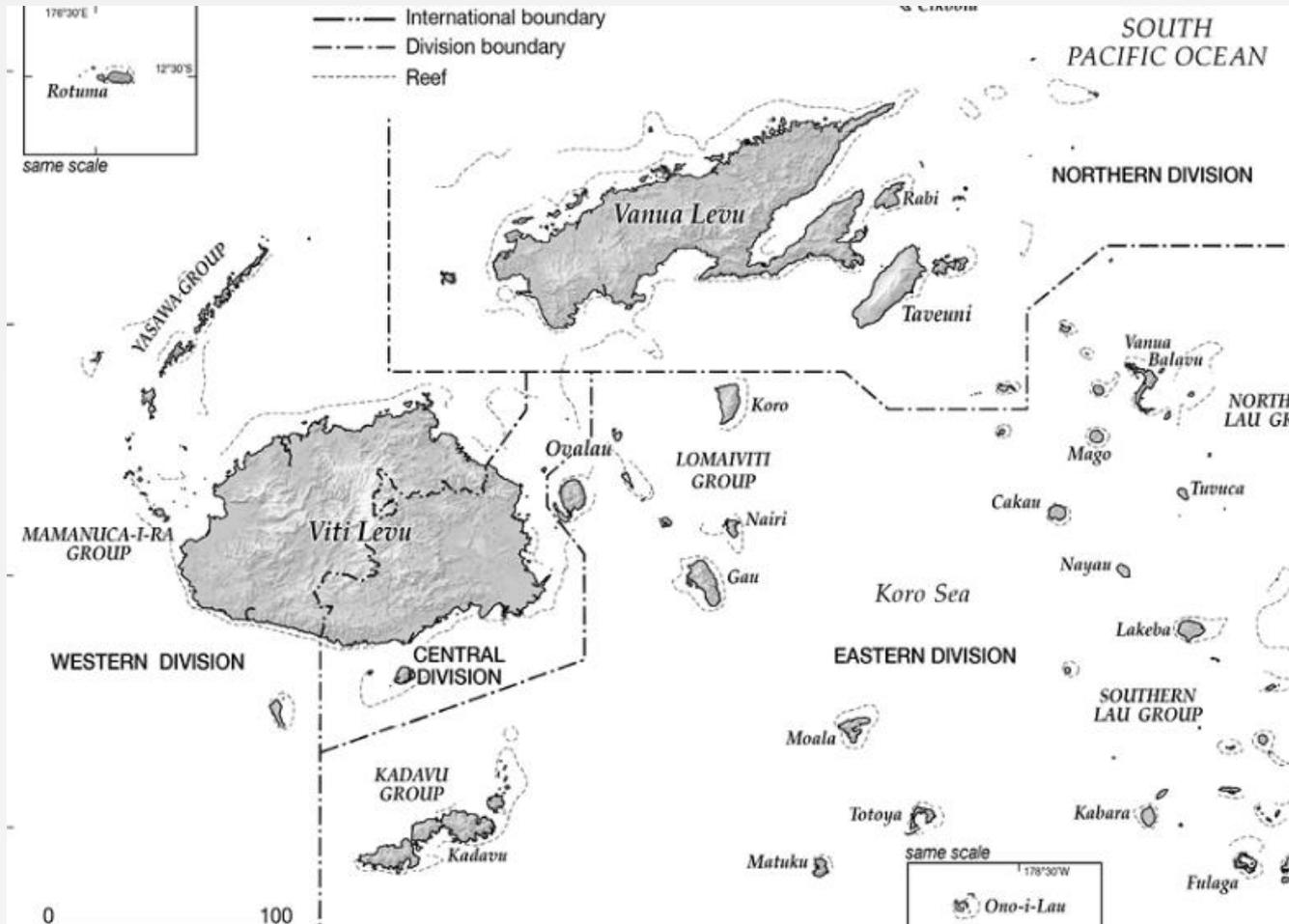
- Introduction
- Stakeholders
- Methodology
  - Supply Assessment
  - Demand Modelling
  - Gap Analysis
- Comparison to other Methods & Approaches
- Findings, Results & Recommendations
- Applicability

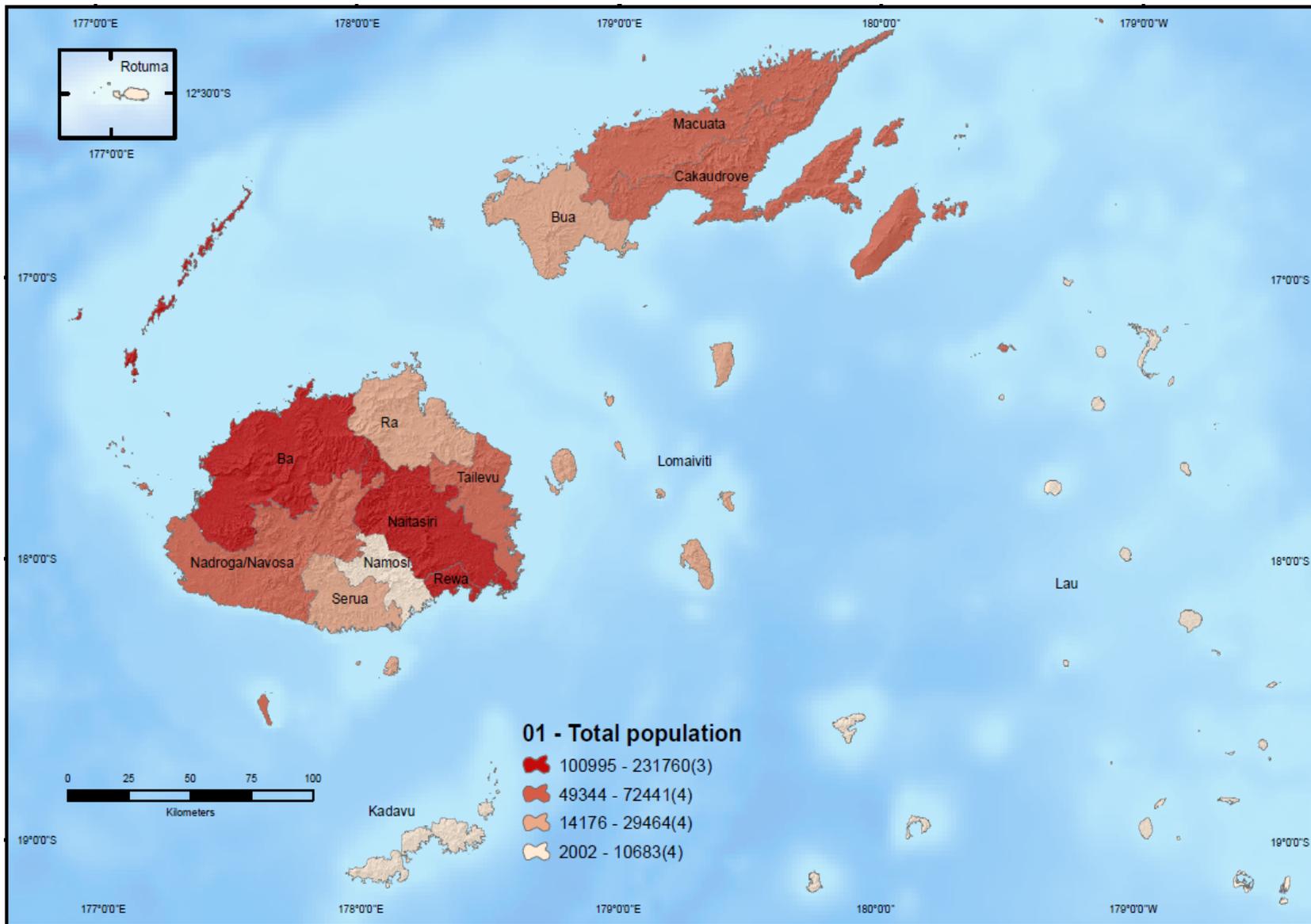


# Introduction

Fiji's health system faces many of the same challenges as other DMCs from population growth and ageing, resulting in increasingly unsustainable costs. Using a population-centric approach, the health service demands of the Fijian population have been modelled into the future to assess and quantify infrastructure and service requirements. Current capacity and service delivery, future public and private sector investment in health services and the changing health and demographic profile of the population are taken into consideration. The results highlight clear opportunities for investment.

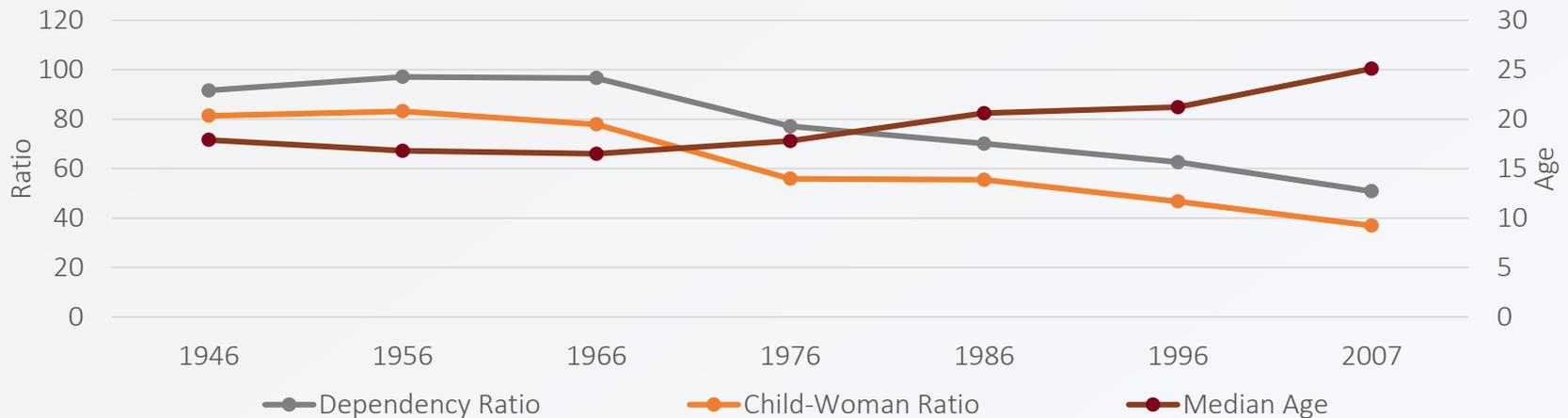
# Republic of Fiji





# General Features

- Trends in urbanisation within certain age groups
  - Population aged 15 to 44 more likely to be urban dwellers
  - Relative parity for those aged 45 to 60
  - Those over 60 years more likely in rural environment
- Gradual growth in population
- Ageing population and longer life expectancies
- Decreasing birth rate



# Health-Related Features

- Non-communicable disease dominate top causes of death and disabilities

Rank	Causes of death by rate	Causes of Premature death (YLLs)	Causes of disability (YLDs)	Causes of death and disability (DALYs)
1	Diabetes	Diabetes	Diabetes	Diabetes
2	Ischaemic heart disease	Ischaemic heart disease	Low back and neck pain	Ischaemic heart disease
3	Cerebrovascular disease	Lower respiratory infect	Skin diseases	Lower respiratory infect
4	Chronic kidney disease	Cerebrovascular disease	Sense organ diseases	Cerebrovascular disease
5	Lower respiratory infect	Chronic kidney disease	Iron-deficiency anaemia	Chronic kidney disease
6	Asthma	Neonatal preterm birth	Depressive disorders	Asthma
7	Hypertensive heart disease	Congenital defect	Asthma	Low back and neck pain
8	Other cardiovascular	Self-harm	Other musculoskeletal	Neonatal preterm birth
9	COPD	Asthma	Intestinal nematode	Congenital defect
10	Self-harm	Other cardiovascular	Migraine	Skin diseases

- Most common risk factors of high-fasting plasma glucose, high body-mass index, dietary risks, high systolic blood pressure, tobacco smoke and high total cholesterol.

# Stakeholders

Fiji Bureau of Statistics

Ministry of Health & Medical Services

Fiji Medical and Dental Council and Medical Assistant Council

Fiji Pharmacy & Poisons Board

Fiji Optometrist Association

Colonial War Memorial Hospital

Lautoka Hospital

MIOT Pacific Hospital

Fiji National University



# Methodology



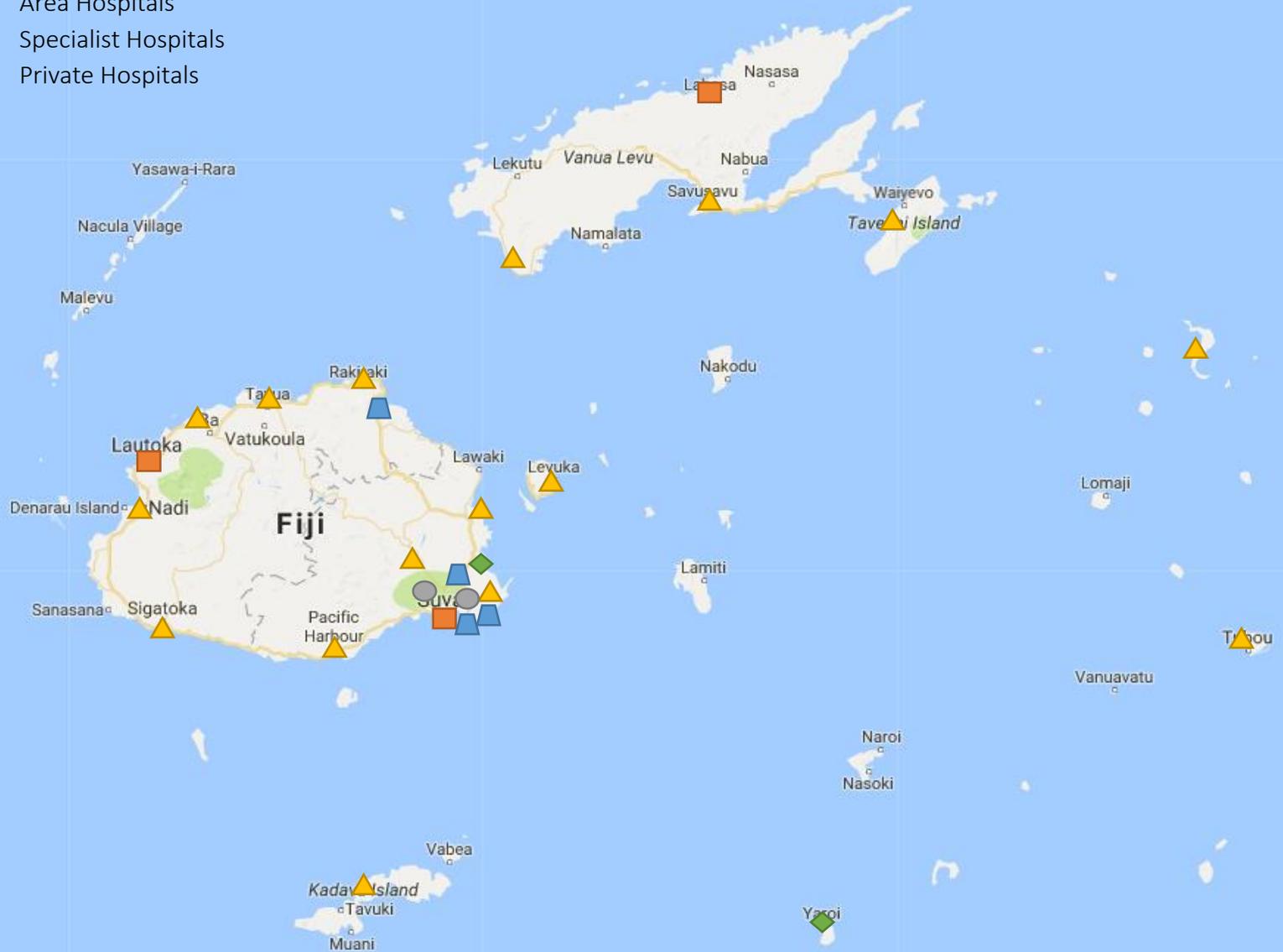
# Supply Assessment

The supply was assessed using the following sources:

- Patient records, PATISPlus
- Disease registries
- MOH annual reports 2005 to 2015
- Hospital inpatient admissions and outpatient statistics 2010 to 2016
- Survey of major infrastructure/physical capacity
- Health workforce councils and professional registration bodies
- Local health service and workforce studies

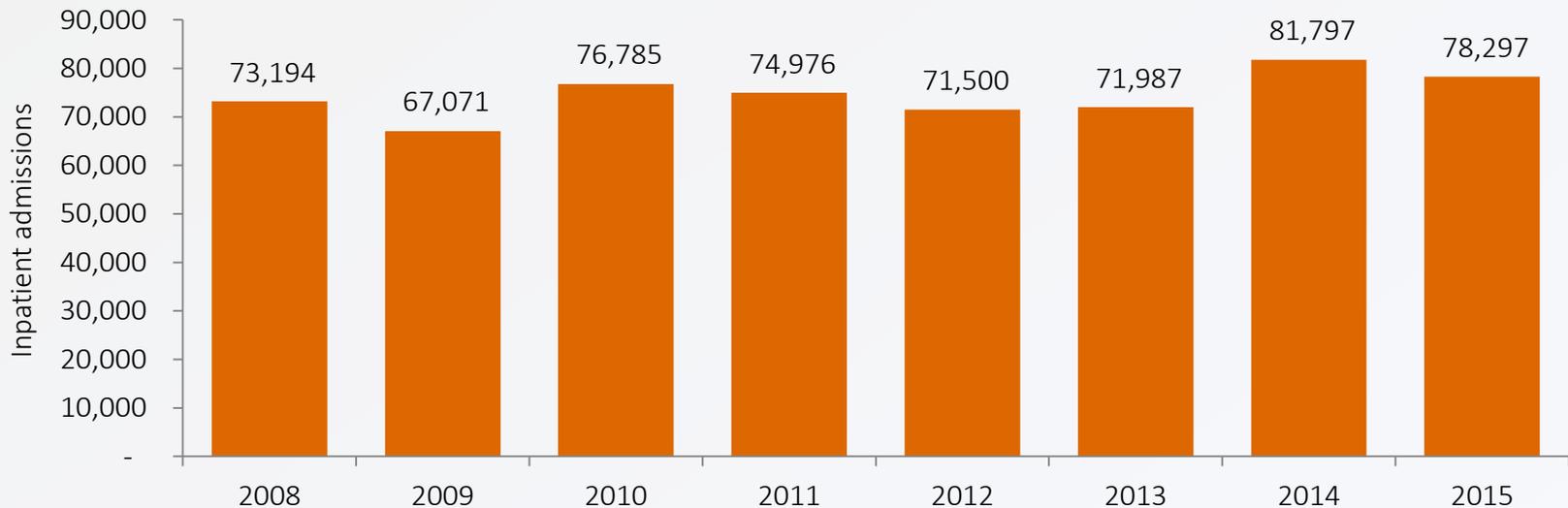


- Divisional Hospitals
- ▲ Sub-Divisional Hospitals
- ◆ Area Hospitals
- Specialist Hospitals
- ▲ Private Hospitals



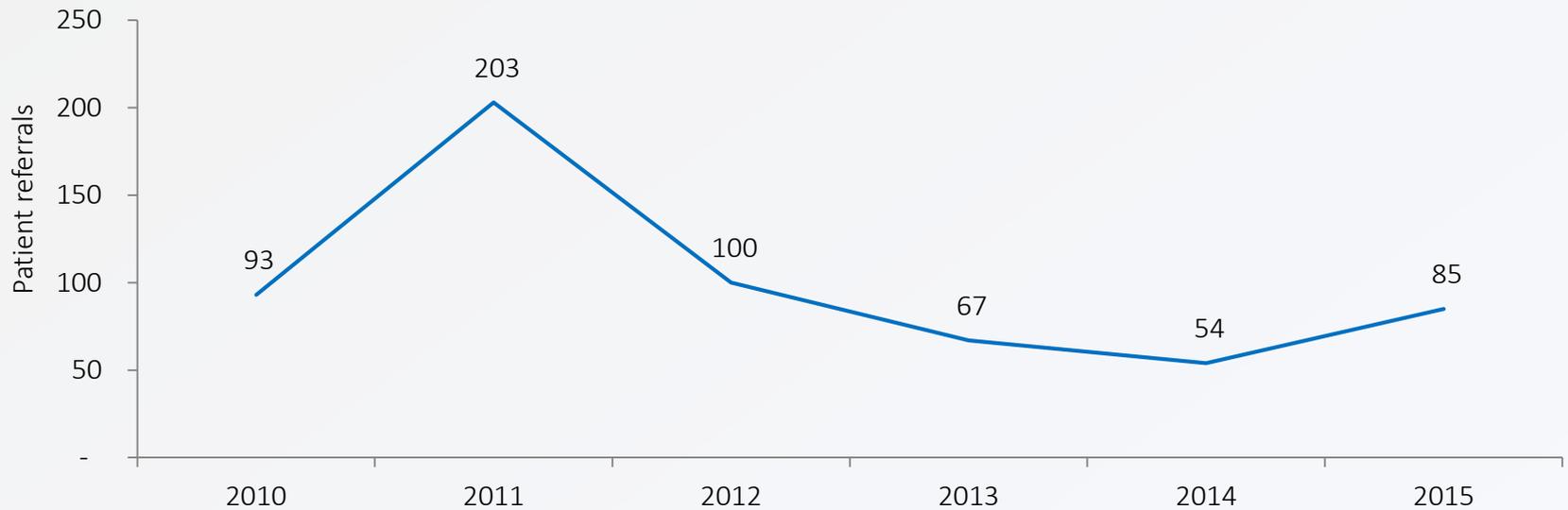
# Inpatient Care

- 73,194 admissions in 2008 increasing to 78,297 admissions in 2015
- From capacity of:
  - 1,533 general public beds
  - 186 specialist public beds
  - 49 private beds
  - 86 public mental health beds
  - Planned capacity of further 320 public beds



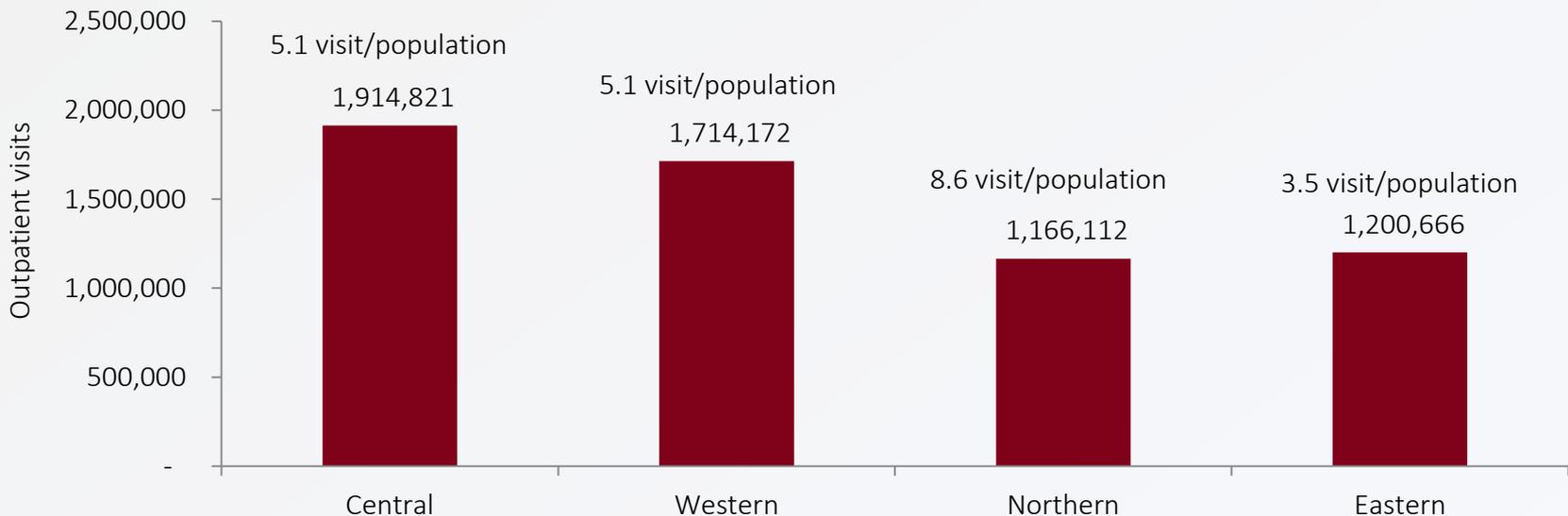
# Inpatient Care

- Overseas referrals with public funding in specialties of:
  - Cardiac
  - Oncology
  - Renal
  - Surgical
  - Ophthalmology
  - Others
- Unknown quantum of private overseas referrals



# Outpatient & Ambulatory Care

- Current supply includes 12 Level A Health Centres, 10 Level B Health Centres, 62 Level C Health Centres, 98 Nursing Stations, 10 Chemotherapy Places, 30 Renal Dialysis Places, and an estimated proportion of private outpatient capacity
- An assumption of private sector outpatient visits have been applied based on self-reported figures within the MIOT Pacific Hospital
- 2015 OPD stats:



# Emergency & Intensive Care

- Three divisional hospitals are equipped with 24-hour emergency departments
- Sub-divisional hospitals with some capacity for urgent care
- Emergency trolleys have not been included as an emergency place

Facility	Emergency Care Places
<b>Divisional Hospitals</b>	
Colonial War Memorial Hospital	16
Labasa Hospital	11
Lautoka Hospital	17
<b>Sub-divisional Hospitals</b>	2 per facility
<b>Total</b>	<b>80</b>

- Intensive care services provided by the public Divisional Hospitals only, primarily at CWM Hospital

Facility	Intensive Care Beds
Colonial War Memorial Hospital	15
Labasa Hospital	3
Lautoka Hospital	3
<b>Total</b>	<b>21</b>

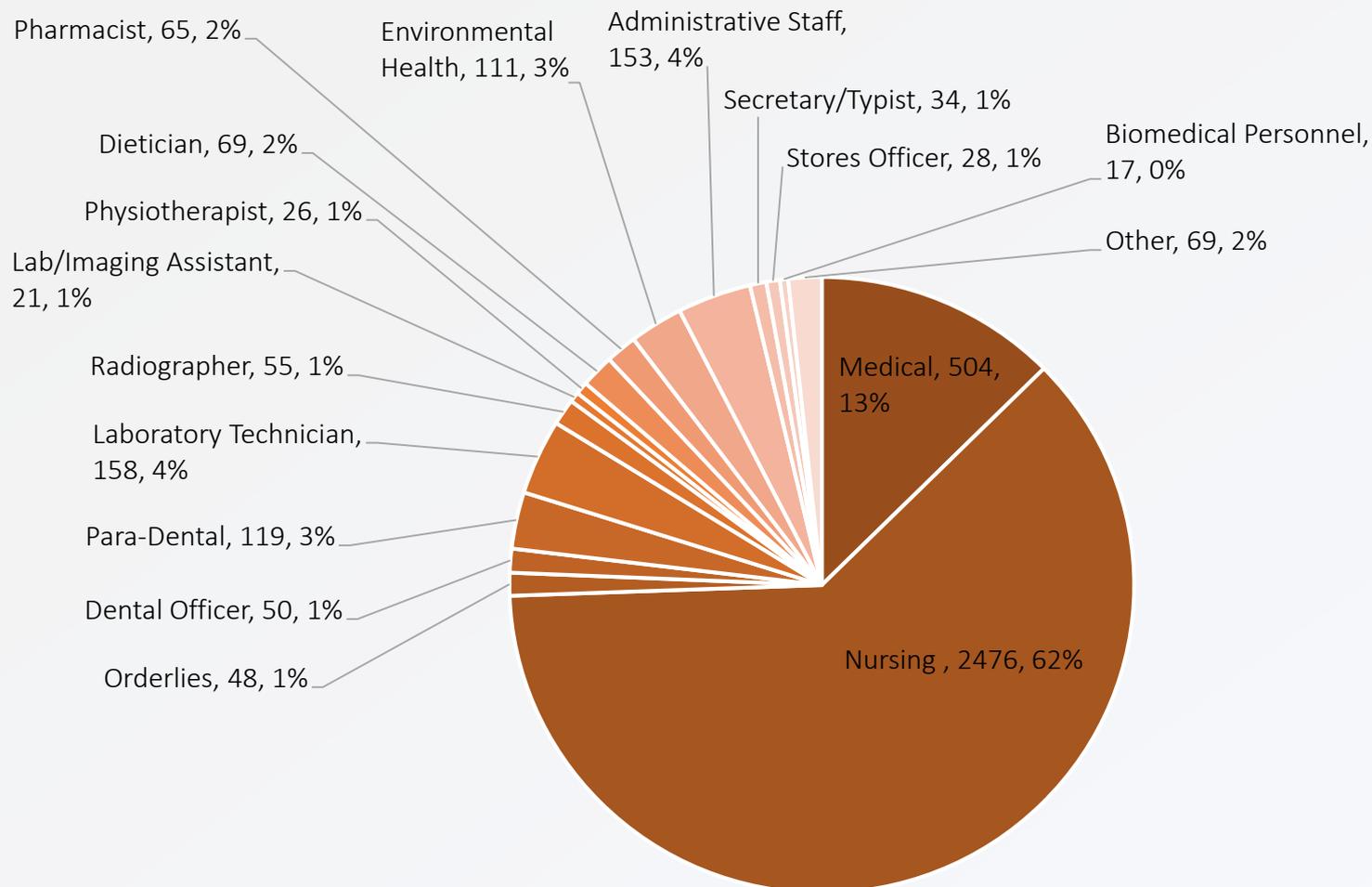
# Operating Theatre & Medical Imaging Care

- 13 operating theatres from Divisional Hospitals
- Sub-Divisional capacity in operating theatres only used when visiting surgical teams came from the CWM hospital in Suva or from international countries

Facility	Operating Theatres
<b>Divisional Hospitals</b>	
CWM Hospital	8
Labasa Hospital	2
Lautoka Hospital	3
<b>Sub-divisional Hospitals</b>	2 per facility
<b>Private Hospitals</b>	
MIOT Pacific	2
<b>Total</b>	<b>51</b>

- Current supply of medical imaging devices in Fiji includes three CT machines, one MRI device, six X-Ray machines, three mammogram machines, and three fluoroscopy devices provided by the Divisional Hospitals and MIOT Pacific Private Hospital

# Health Workforce



# Demand

Demand for health services in Fiji is increasing:

- Increased health seeking behaviour/ health literacy
- Improved accessibility
- Population growth
- Increasing life expectancy
- Increased prevalence of non-communicable diseases
- Rising income levels



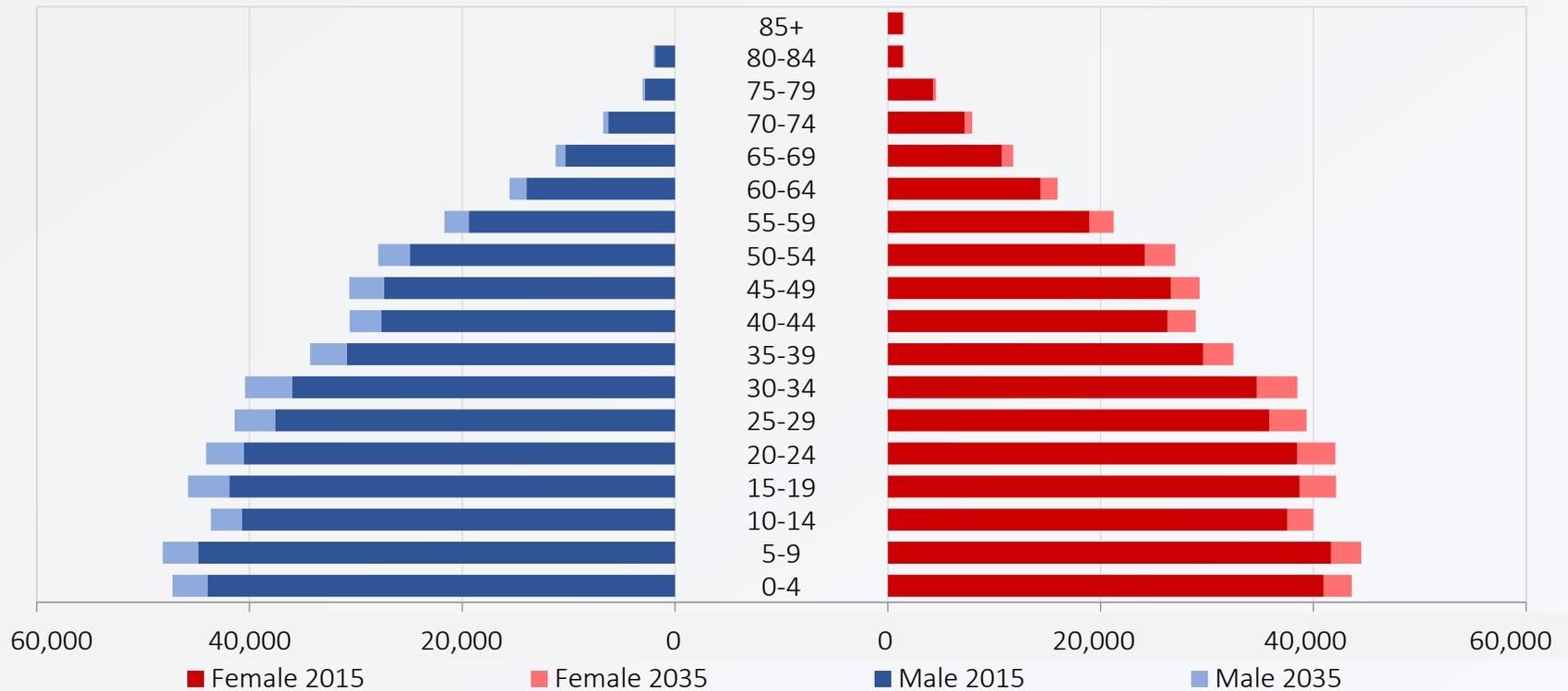
# Demand Modelling

- Based on international reference files of per capita rates developed from current and historical service utilisation rates from advanced health systems with comprehensive data collection, projected into the future
- Consider local Fijian sociodemographic, economic, political, environmental and technological differences
- Informed by Fiji's annual health statistical reports and current supply rates of services
- Application to population projections from Fiji Bureau of Statistics
- Available across full range of service types



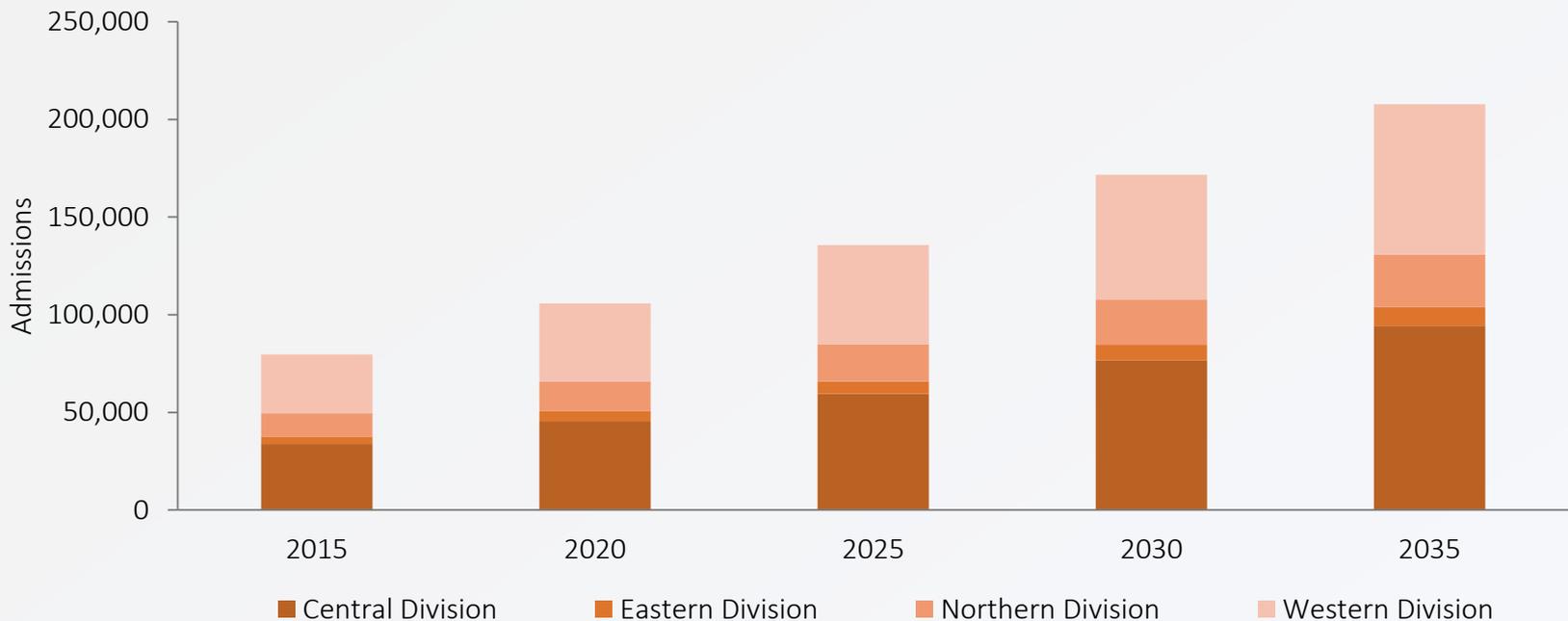
# Population Projections

	2015	2020	2025	2030	2035	% change p.a.
Central	374,119	392,678	410,973	431,021	454,576	1.08%
Western	334,675	342,769	350,241	358,569	369,655	0.52%
Northern	134,894	133,998	132,140	130,208	129,559	-0.20%
Eastern	40,431	41,290	42,631	43,349	44,485	0.50%
Total	884,119	910,734	935,984	963,147	998,275	0.65%



# Acute Inpatient Services

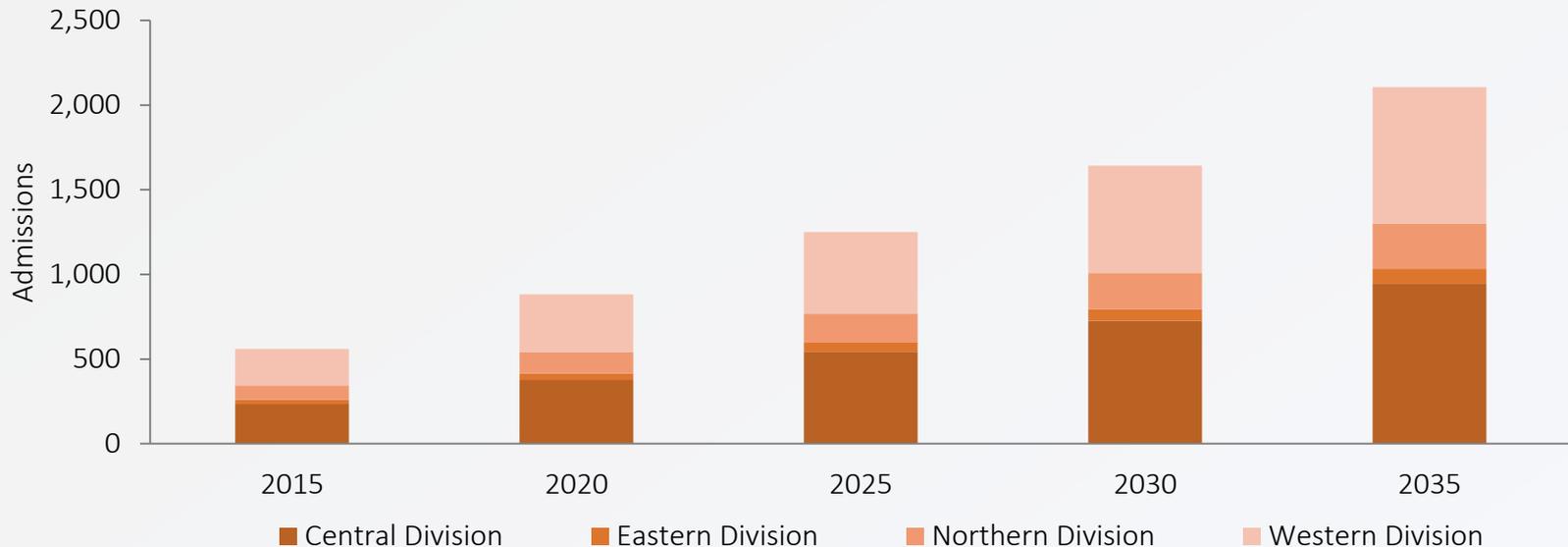
- Increase of acute overnight and same day services from 105,732 admissions by 2020 to 207,739 admissions by 2035, growth rate of 6% per annum



- Operational assumption of 85% overnight occupancy and best-practice ALOS
- Converted to capacity, 1,842 acute overnight beds and places by 2020 to 2,370 by 2035

# Mental Health Services

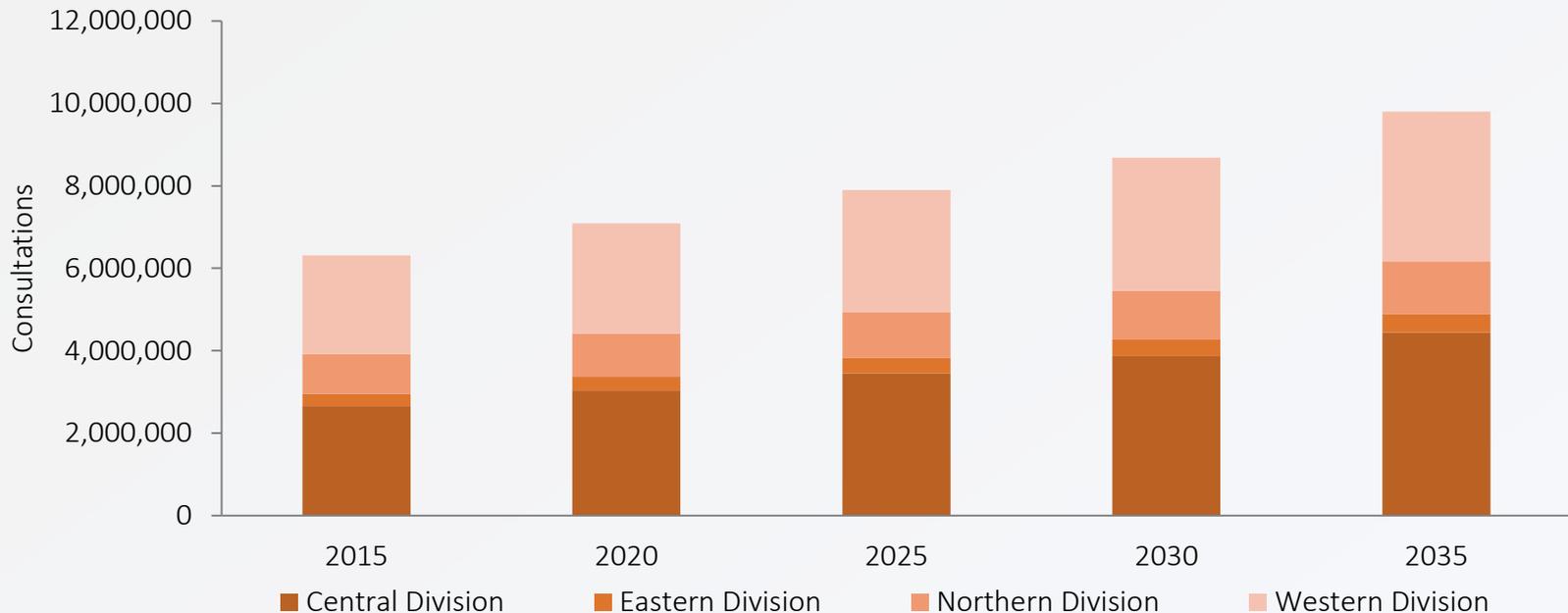
- Increase of mental health services from 883 admissions by 2020, to 2,107 admissions by 2035, growth rate of 9% per annum



- Operational assumption of 85% overnight occupancy and best-practice ALOS
- Converted to capacity, 96 beds and places by 2020 to 131 by 2035

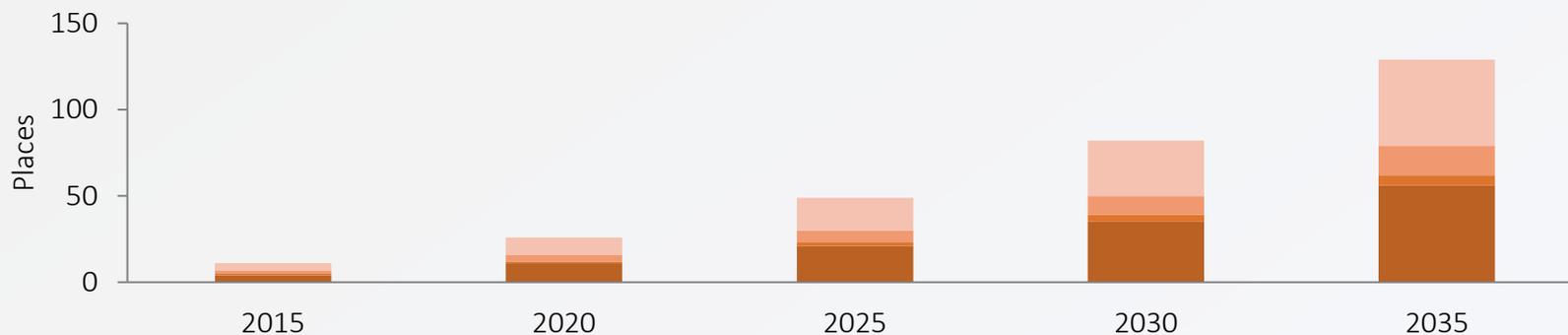
# Outpatient Services

- Increase of outpatient services requirements from 7.1 million by 2020, increasing to 9.8 million by 2035, growth rate of 3% per annum
- Converted to capacity, 1,362 consultation rooms by 2020 to 1,901 by 2035

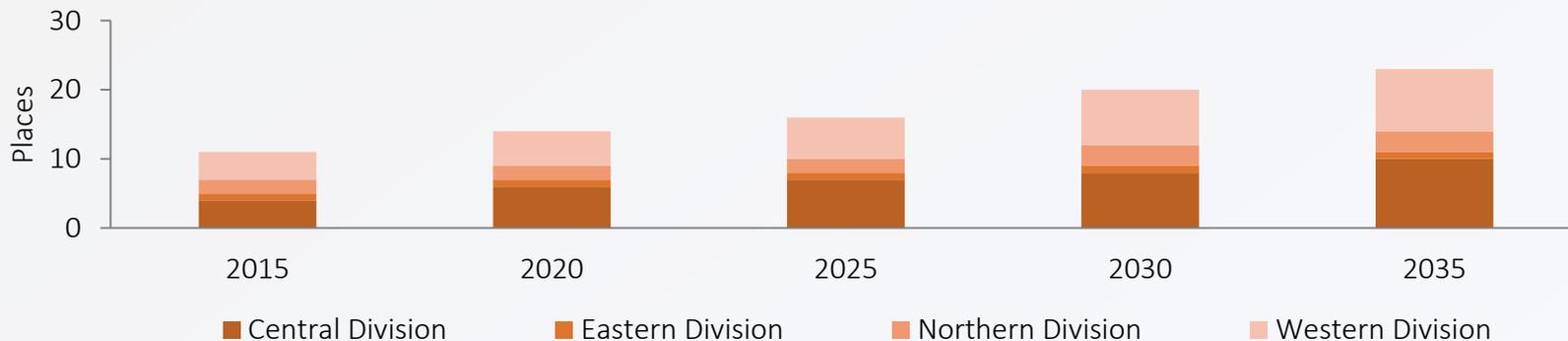


# Renal Dialysis & Chemotherapy

- Increase of renal dialysis services from 26 places by 2020, to 129 places by 2035, growth rate of 26% per annum
- Assumption that renal dialysis is provided twice a week, increasing to an evidence-based rate of three times a week by 2035

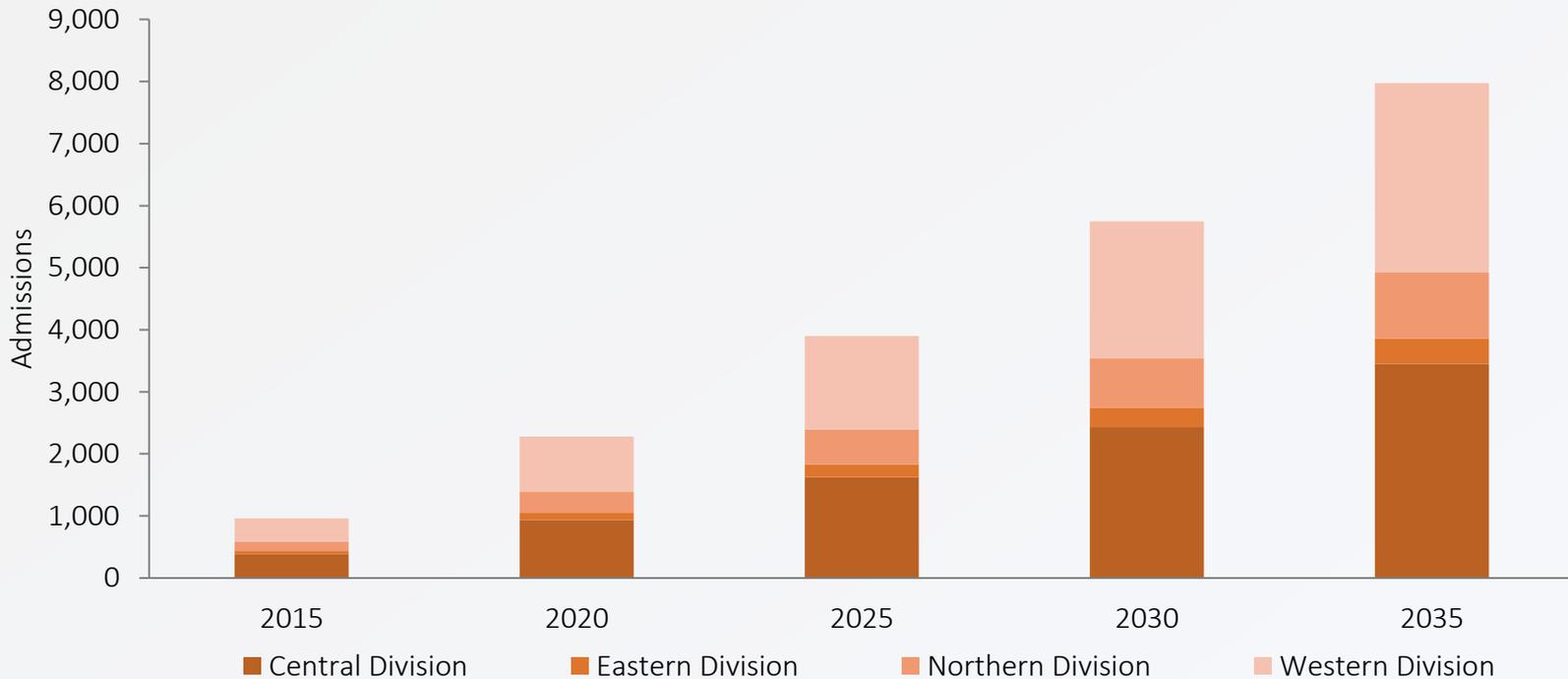


- Increase of chemotherapy services from 14 places by 2020, doubling to 23 places by 2035



# Rehabilitation & Long Stay Care

- Increase demand for non-acute services from 2,279 admissions by 2020, to 7,974 admissions by 2035, a growth rate of 17% per annum
- Converted to capacity, 106 non-acute beds and places by 2020, growing to 201 by 2035

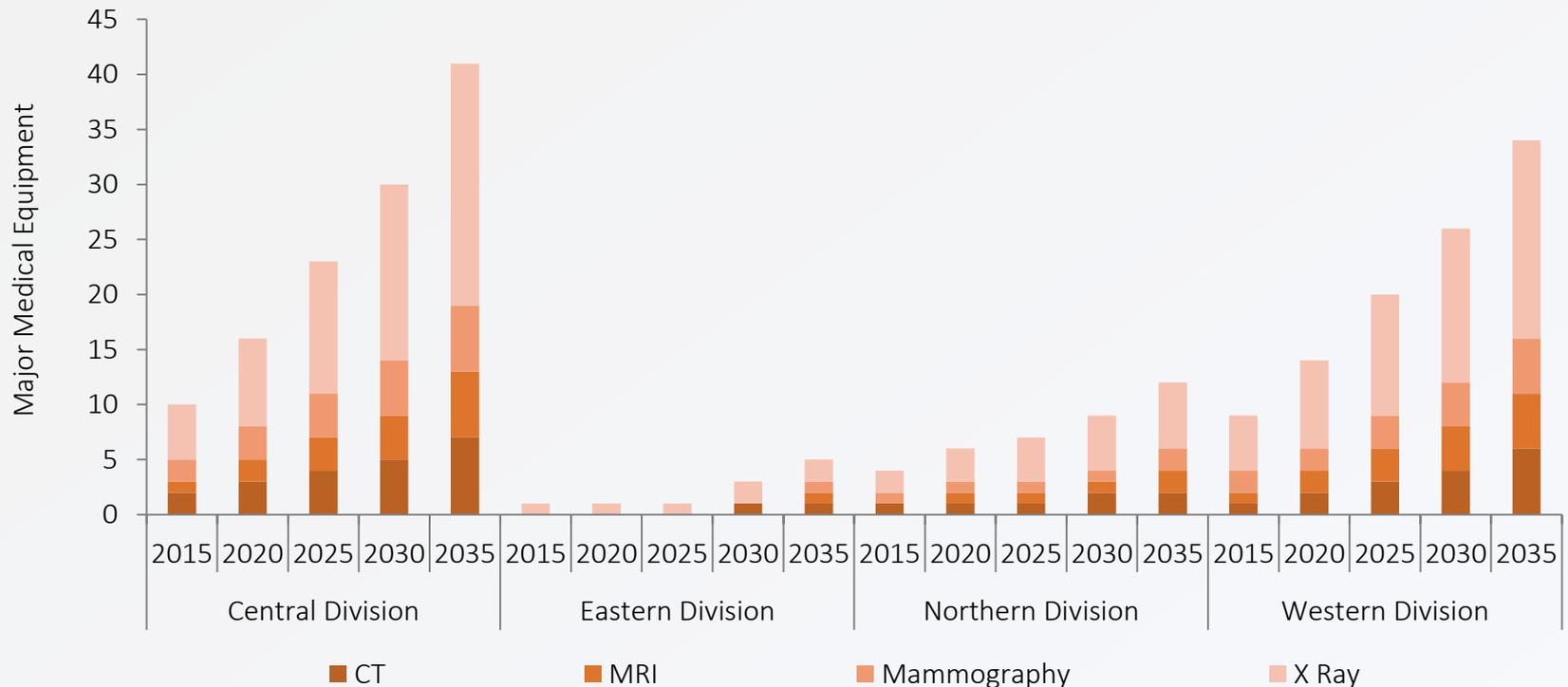


# Emergency, Intensive Care & Operating Theatre Services

- Emergency Services
  - Increase of emergency services from 260,349 occurrences by 2020, to 429,603 occurrences by 2035, a growth rate of 4% per annum
  - Converted to capacity, 118 emergency care places by 2020, to 203 places by 2035
- Intensive Care Services
  - Increase of intensive care services of 1,650 episodes by 2020, to 4,366 episodes by 2035, a growth rate of 11% per annum
  - Converted to capacity, 45 intensive care beds by 2020, to 183 places by 2035
- Operating Theatre Services
  - Increase of operating theatre services from 95,540 occurrences by 2020, to 151,437 occurrences by 2035
  - Converted to capacity, 69 operating theatres by 2020, to 110 theatres by 2035

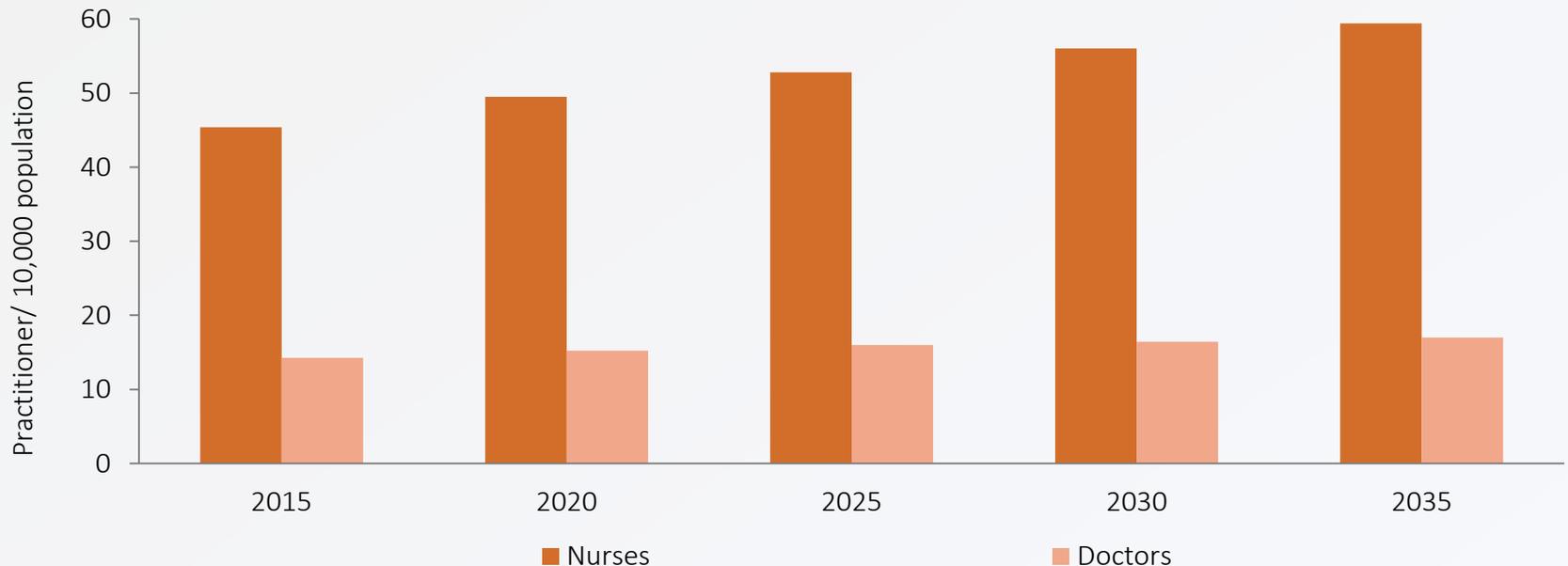
# Medical Imaging Services

- Increase of total medical imaging services from 155,053 scans by 2020, to 367,055 scans by 2035
- Converted to capacity, 37 major medical equipment by 2020, to 89 by 2035
- Central Division projected to undergo the largest demand

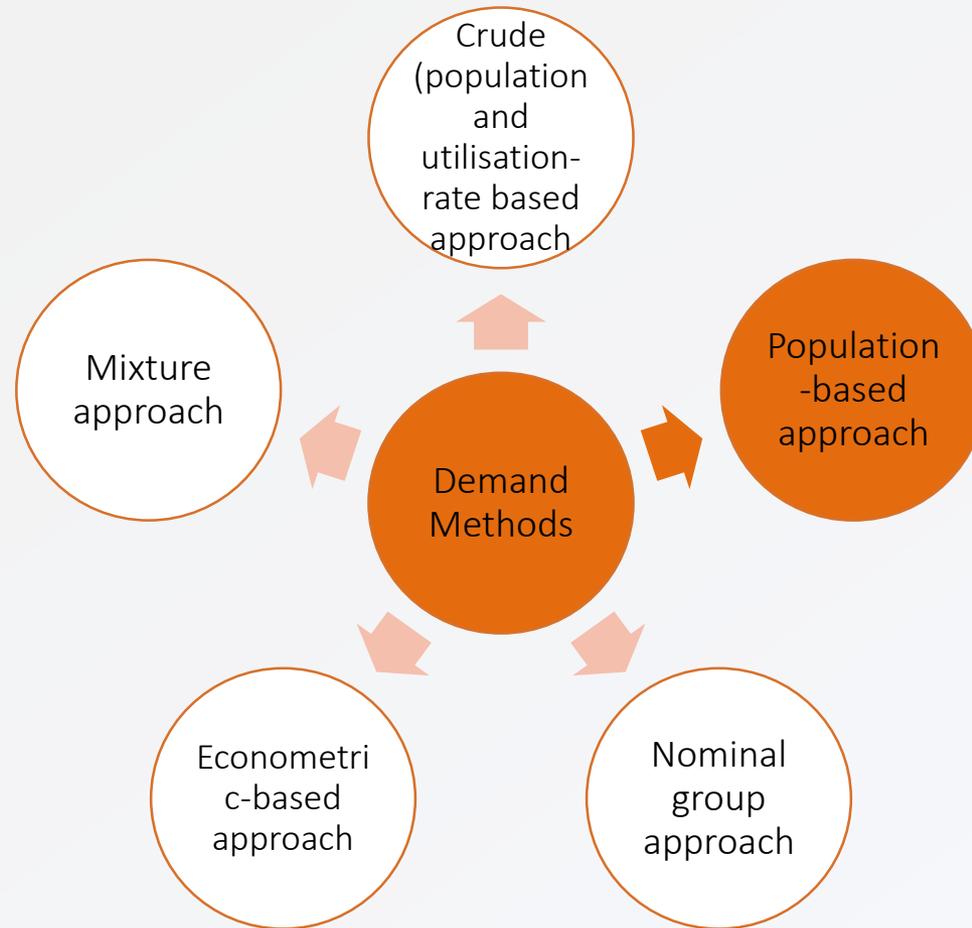


# Workforce

- Demand modelling indicates:
  - 1,386 FTE medical practitioners are required in 2020, growing to 1,700 by 2035, a growth rate of 1.5% per annum
  - 4,509 FTE nursing staff required in 2020, growing to 5,930 by 2035, a growth rate of 2.1% per annum
  - 266 FTE oral health practitioners required in 2020, growing to 272 in 2035, a growth rate of 0.2% per annum
  - 1,584 FTE allied health professionals in 2020, growing to 1,845, a growth rate of 1% per annum



# Other Methods & Approaches



# Findings, Results & Recommendations



# Gap Analysis

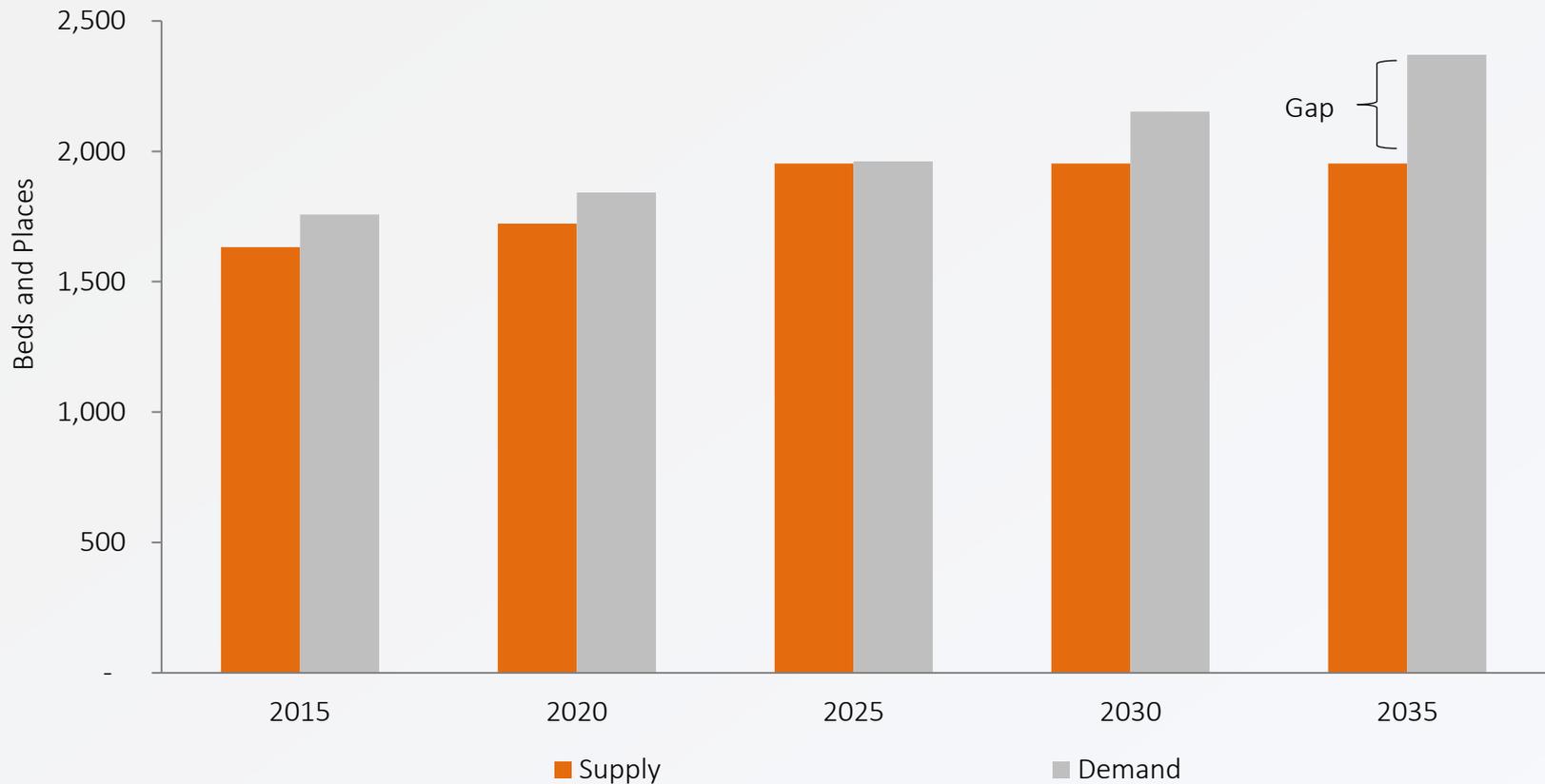
$$\text{Supply} - \text{Demand} = \text{Gap}$$

- Comparison of supply against projected demand for Fiji's population
- Calculated at the level of built capacity (e.g. beds, operating theatres, emergency department bays, etc.) and converted back into activity volume estimates, due to limitations in the supply-level information, with exception of outpatient care
- Current supply for all health services held constant for all service types and applied as future supply, with the exception of acute inpatient care services, which has known reported increases in capacity planned and committed by the Government
- Limitation in available information for private sector provision and growth
- The current and future expected supply is used to calculate the gap in services from 2015 through to 2035



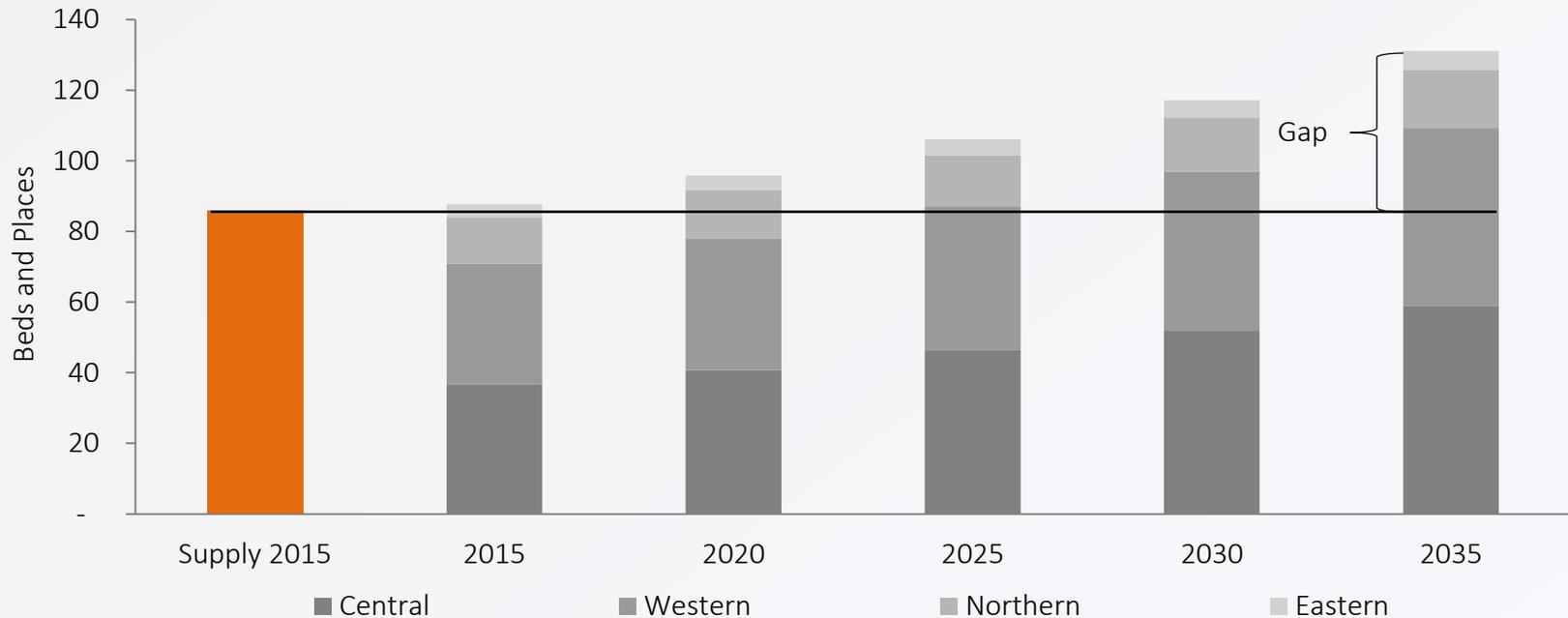
# Acute Inpatient Services

- By 2020, a gap of 119 acute beds and places is projected, increasing to a gap 417 beds and places by 2035



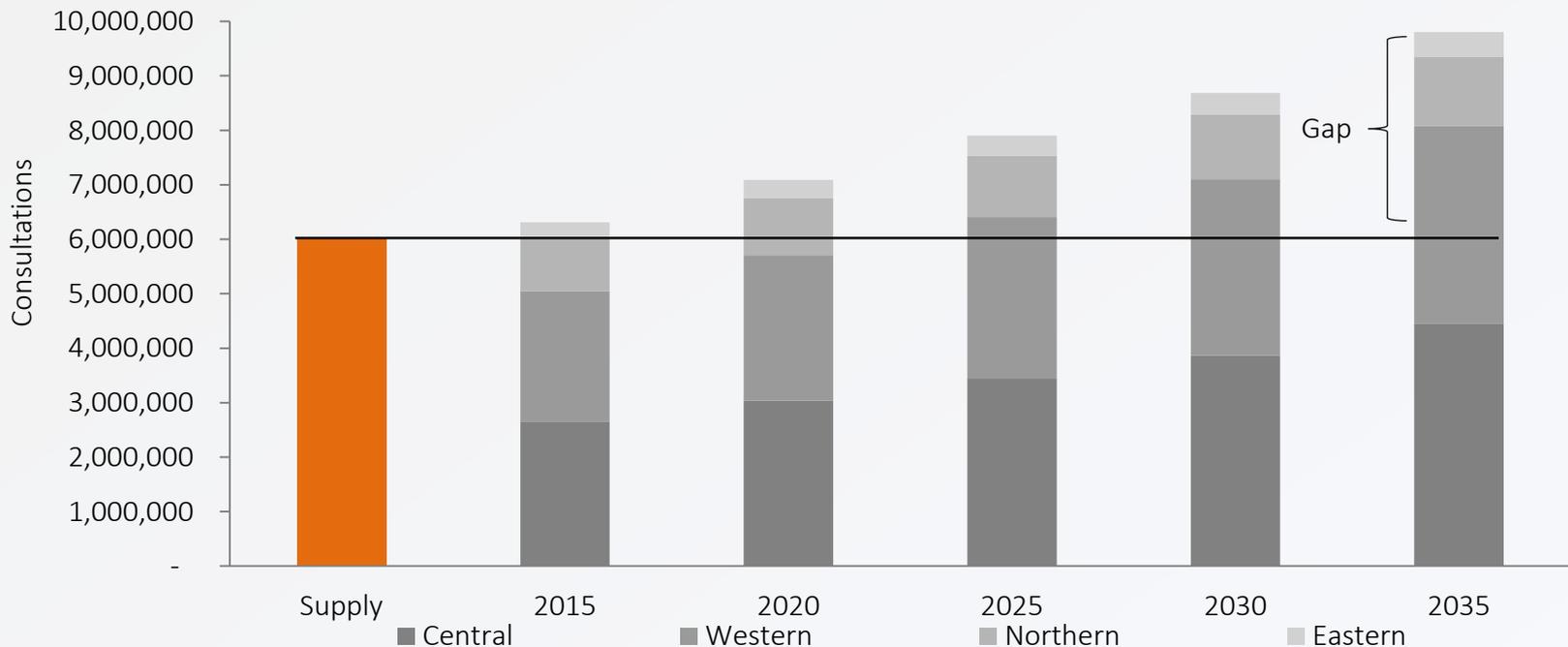
# Mental Health Services

- Gap is projected to increase from 10 beds and places by 2020, to 45 beds and places by 2035
- Due to centralisation of current service provision, in the future the largest proportion of gap in services will be experienced in the Western Division



# Outpatient Services

- Gap in 1.1 million outpatient consultations emerges by 2020, growing to a gap of 3.8 million by 2035
- Converted to consultation room capacity, this converts to a gap of 255 outpatient consultations rooms by 2020, increasing to 897 outpatient consultation rooms by 2035
- Largest gaps experienced by the Central and Western Divisions

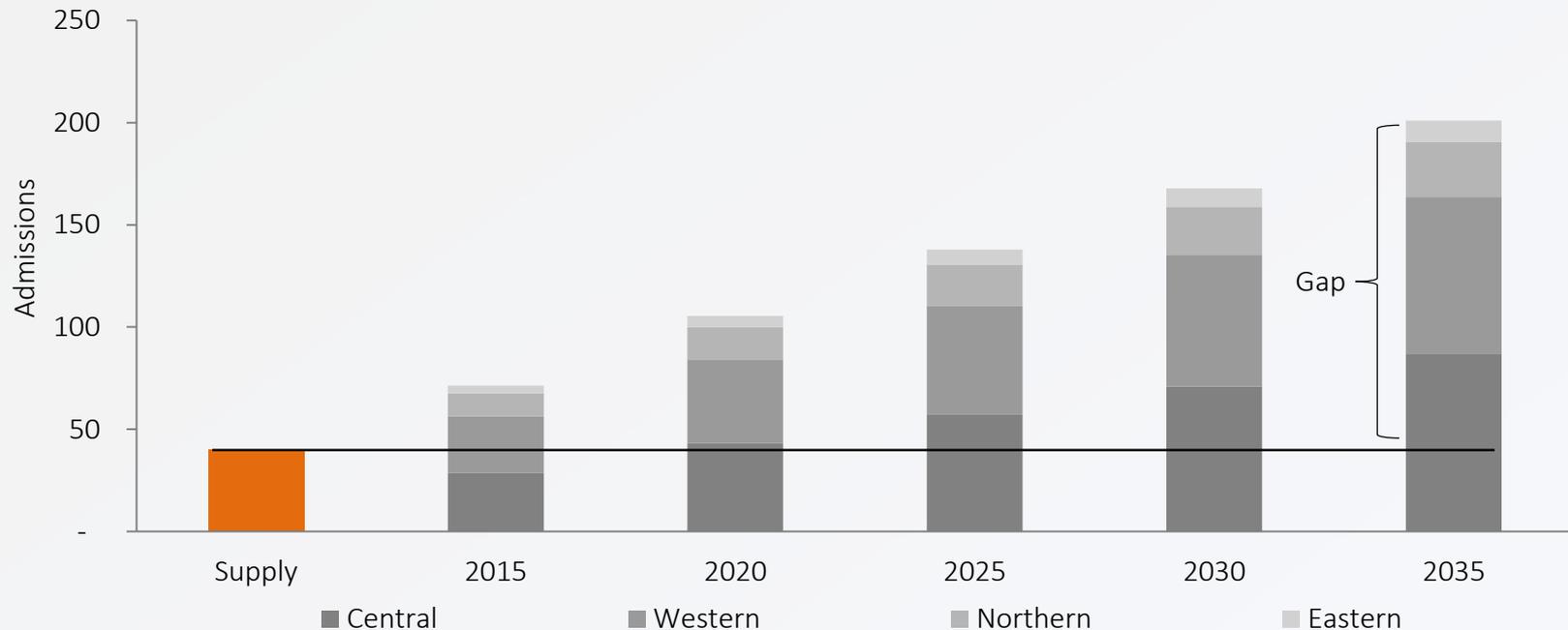


# Renal Dialysis & Chemotherapy

- Renal dialysis
  - Gap of 19 renal dialysis places emerges by 2025, growing significantly to 99 places by 2035
  - Due to centralisation of current service provision, in 2035, the Western Division accounts for 40% of the gap
- Chemotherapy
  - Gap of 4 places by 2020, increasing three-fold to a gap of 13 places by 2035
  - Due to centralisation of current service provision, in 2035, the Western division accounts for 54% of the gap

# Rehabilitation & Long Stay Care

- Gap of 66 beds and places by 2020, growing to 161 beds and places by 2035
- Due to centralisation of current service provision, in the future the largest proportion of gap in services will be experienced in the Western Division

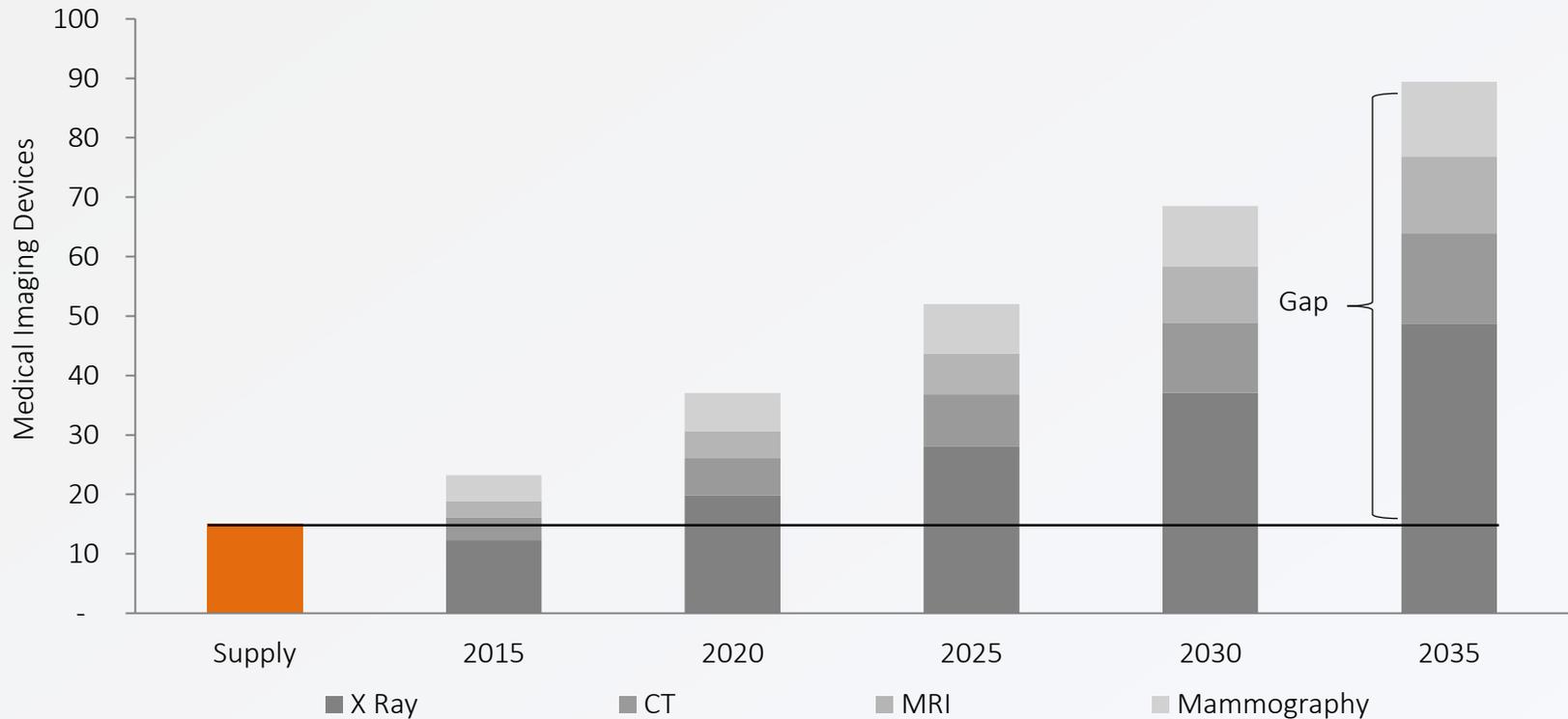


# Emergency, Intensive Care & Operating Theatre Services

- Emergency care
  - Gap of 40 emergency care places will exist by 2020, more than tripling to 125 places by 2035
  - Largest proportion of gap is experienced in the Central and Western Divisions, in total representing 88% of the total 2035 gap
- Intensive care
  - Gap in intensive places increases from 24 places by 2020 to 80 intensive care places by 2035
  - Central and Western Divisions represents 43% and 37% of the gap in 2035, respectively
- Operating theatre
  - By 2020, calculated gap in operating theatres is 18, increasing to a gap of 59 operating theatres by 2035

# Medical Imaging Services

- By 2020, a gap of four MRI machines, three CT machines, eleven X-Rays and four Mammography machines
- Central and Western Divisions are projected to have the highest proportions of gap



# Opportunities & Key Priorities

Gap



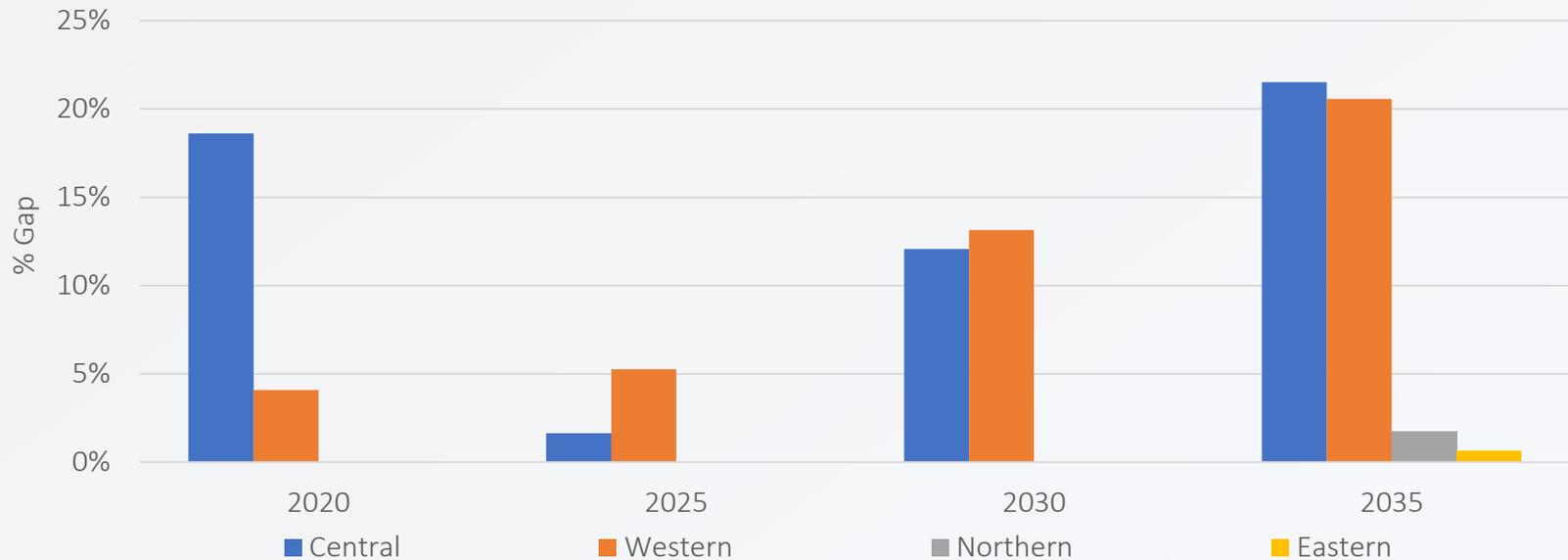
Demand



Comparative Need

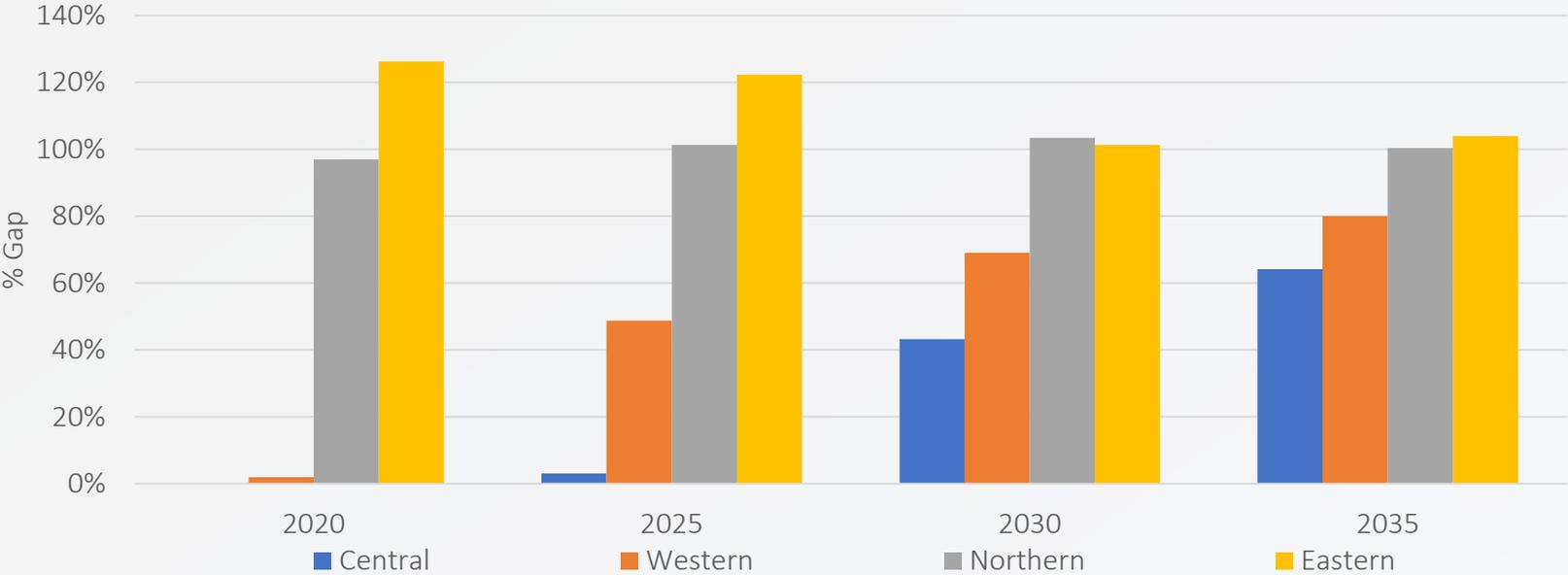
- By service type
- By geography
- By future year

- Acute inpatient services:



# Opportunities & Key Priorities

- Renal dialysis services:



# Opportunities & Key Priorities

	Service	Division
<b>High Acuity</b>	Radiotherapy*	Central
	Renal dialysis	Northern and Western
	Chemotherapy	Northern
	Rehabilitation and long stay care	Western, Northern and Eastern
	Intensive care	Western
<b>Medium Acuity</b>	Medical imaging (MRI and mammography)	Fiji-wide
	Chemotherapy	Western and Eastern
	Intensive care	Northern
	Emergency services	Central and Western
	Outpatient care	Central and Western

\*not included in analysis, however complete absence of service in Fiji has significant implications on treatment options available to citizens and residents

# Applicability

- Identification of key priority areas
- Public infrastructure investment plans
- Engagement with private sector
- Private and PPP investment plans
- Clinical graduate and traineeship volumes
- Regulation and control over licensing of private facilities