



Advancing NSW cancer control

Data insights, benchmarking
& networked care to improve
outcomes and reduce disparities

Professor Tracey O'Brien
NSW Chief Cancer Officer
CEO, Cancer Institute NSW
May 2024

Cancer Institute NSW



Acknowledgement of Country

I acknowledge the Traditional owners of the lands on which we work and live, and recognise their continuing connection to land, water and community. I pay my respects to Elders past and present.



Acknowledging lived experience

We value everyone impacted by cancer: patients, carers, loved ones, and supporters.

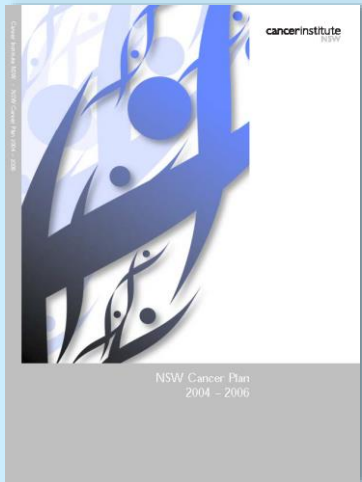
The voices of those with lived experience of cancer are powerful and essential.

They ensure cancer care in NSW continuously improves and meets people's needs.

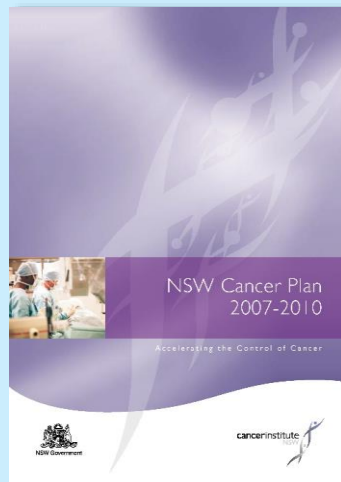
NSW Cancer Plans

- Building momentum over 20 years

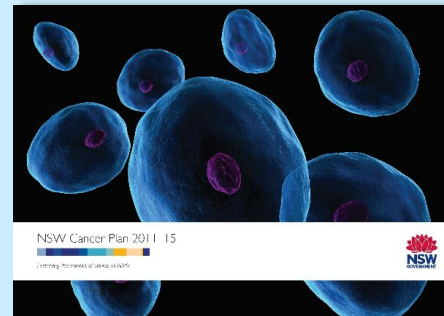
2004-2006



2007-2010



2011-2015



2016-2021



★ 2022-2027



Process / outputs

Outcomes

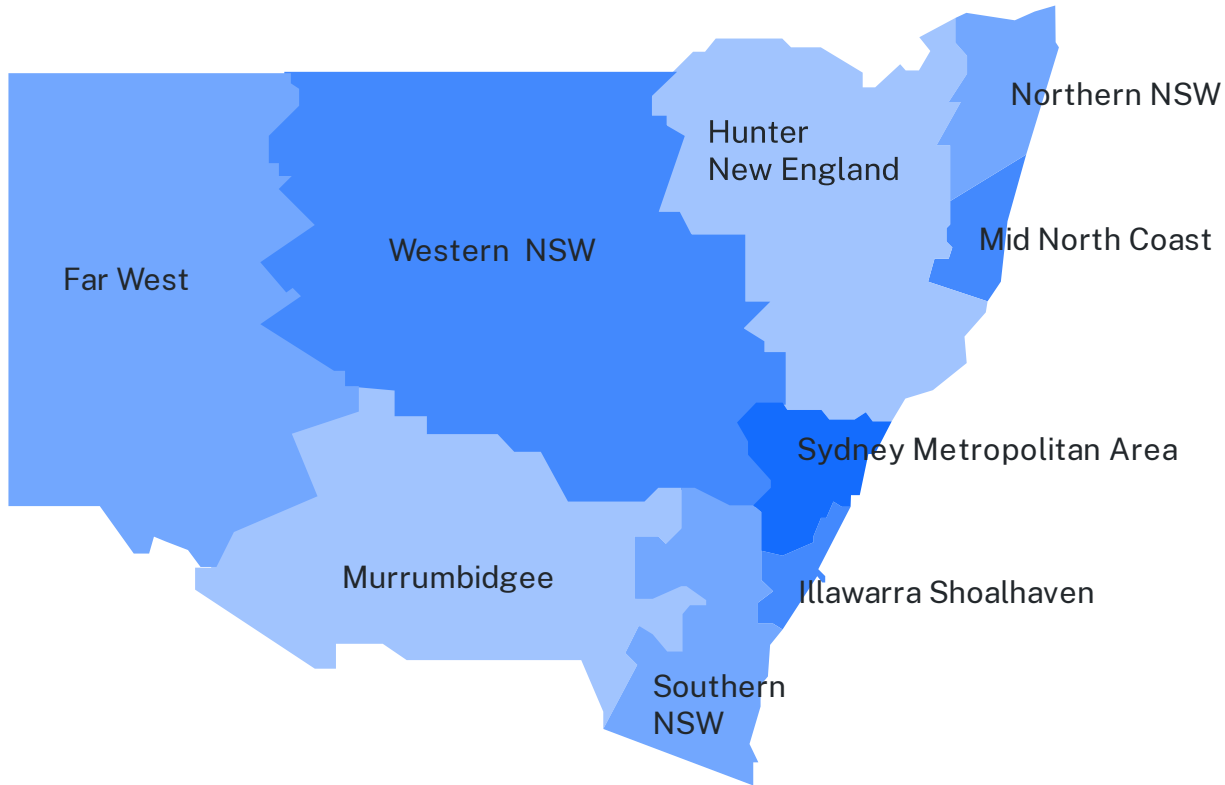
Impact

Exemplars / maturity model

Performance index

Understanding cancer care in NSW

NSW Population 8.09m



53,229

People are expected to be diagnosed with cancer

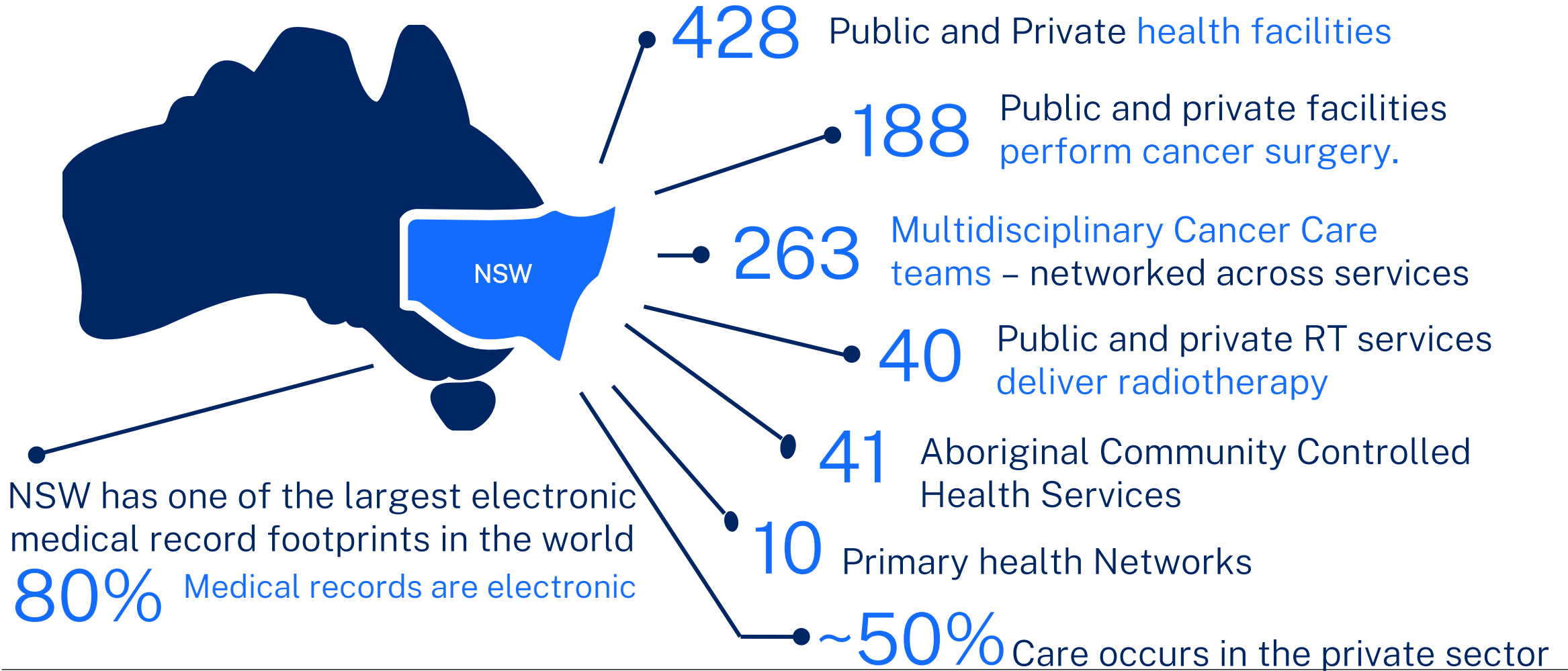
15,825

People are expected to die from cancer

144,991

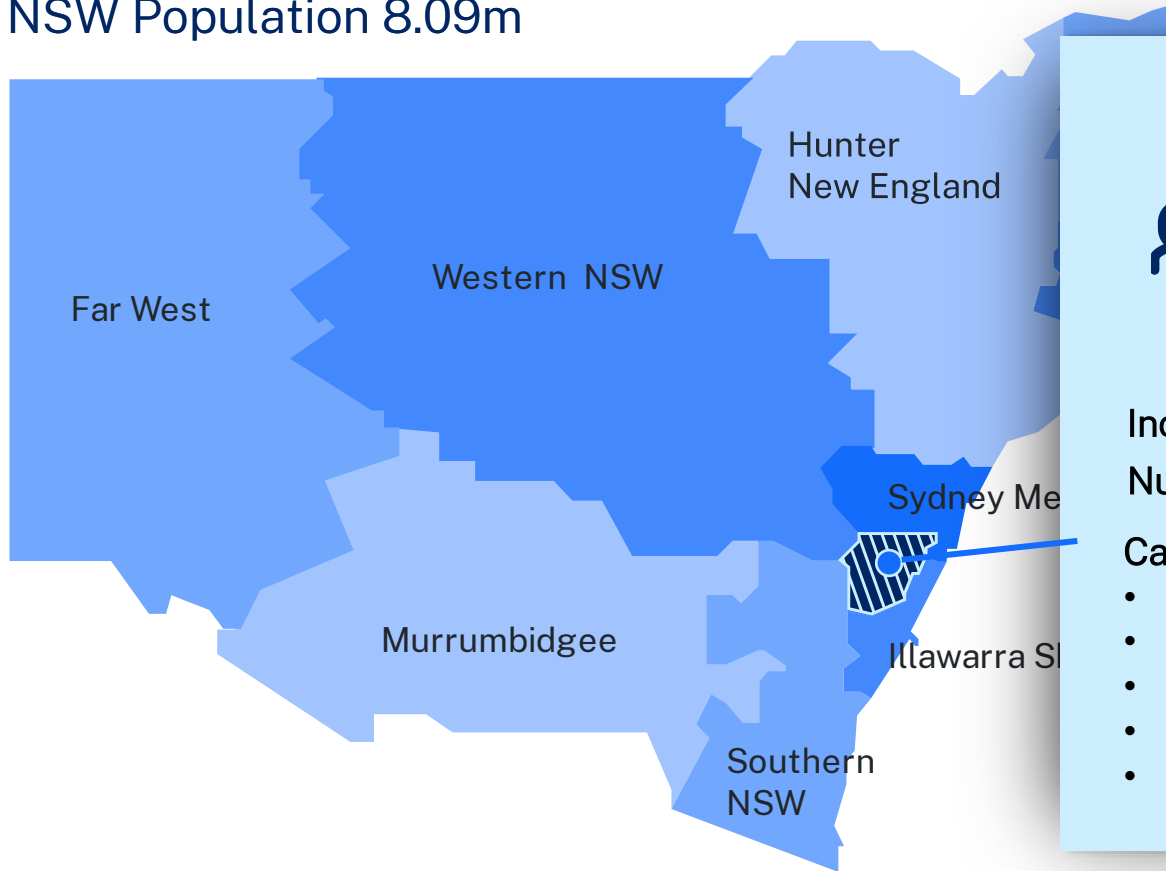
People living through or with cancer at 5 years

NSW distributed networked model of cancer care



Understanding the context of NSW

NSW Population 8.09m



South Western Sydney
LHD population

1,053,154

Incidence **5689**

Number of people living through or with cancer at 5 years **15,225**

Cancer cohort

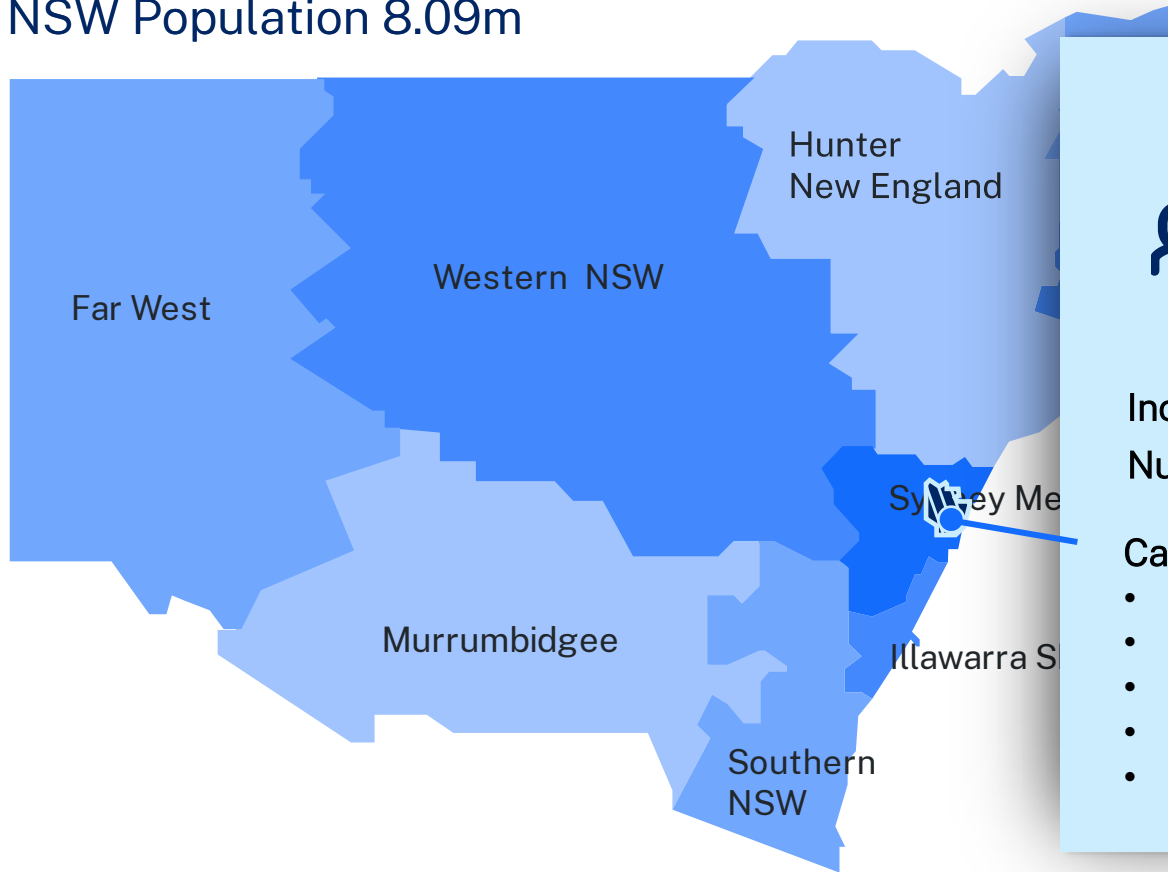
- Aboriginality 2%
- 75+ 28%
- Non English speaking COB 40%
- SEIFA 1 and 2 58%
- Regional 14%

Public hospitals total 5
(Liverpool, Campbelltown,
Bankstown/Lidcome, Fairfield,
Bowral)

Private hospitals total 4

Understanding the context of NSW

NSW Population 8.09m



Northern Sydney
LHD population

935,152

Incidence **5348**

Number of people living through or with cancer at 5 years **17,399**

Cancer cohort

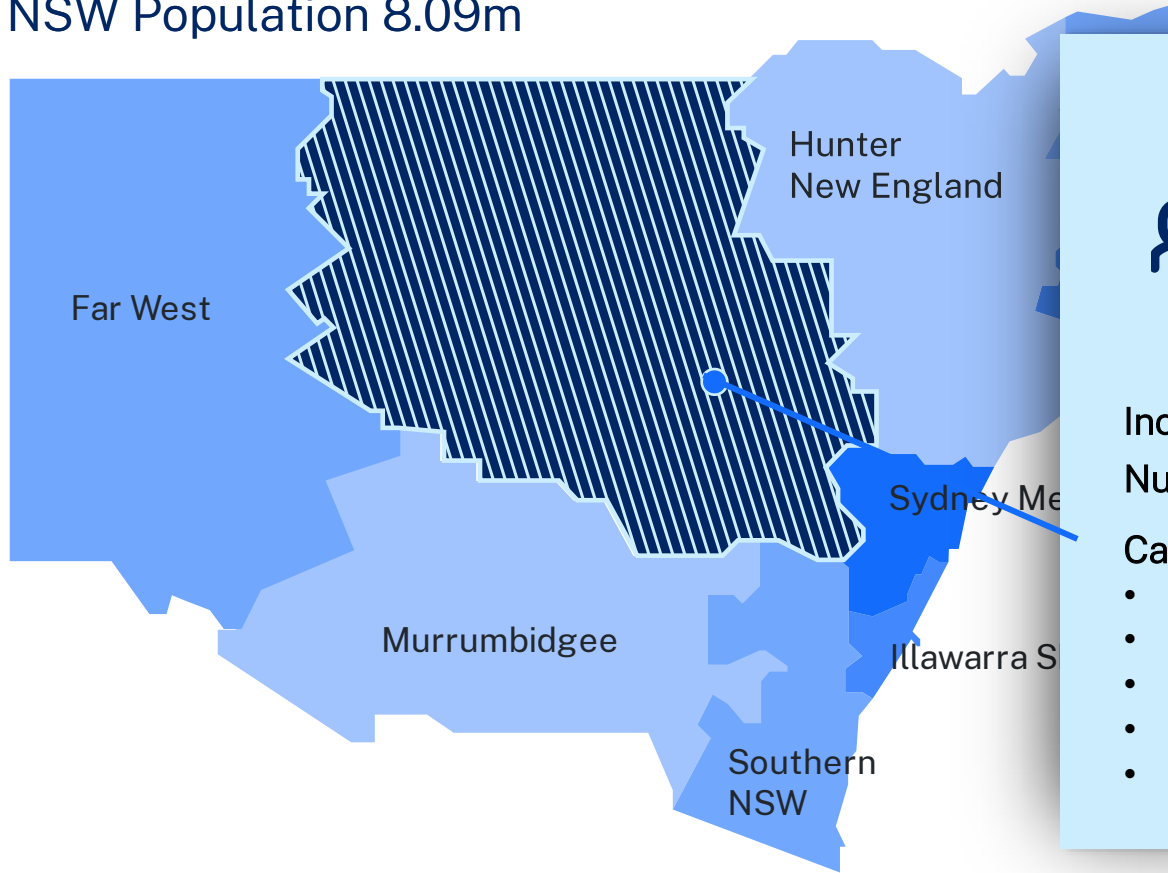
- Aboriginality 0%
- 75+ 34%
- Non English speaking COB 24%
- SEIFA 1 and 2 <2%
- Regional 1%

Public hospitals total 5
(Royal North Shore, Manly, Mona Vale, Ryde, Hornsby)

Private hospitals total 10

Understanding the context of NSW

NSW Population 8.09m



Western NSW
LHD population
281,814

Incidence **2080**

Number of people living through or with cancer at 5 years **5,899**

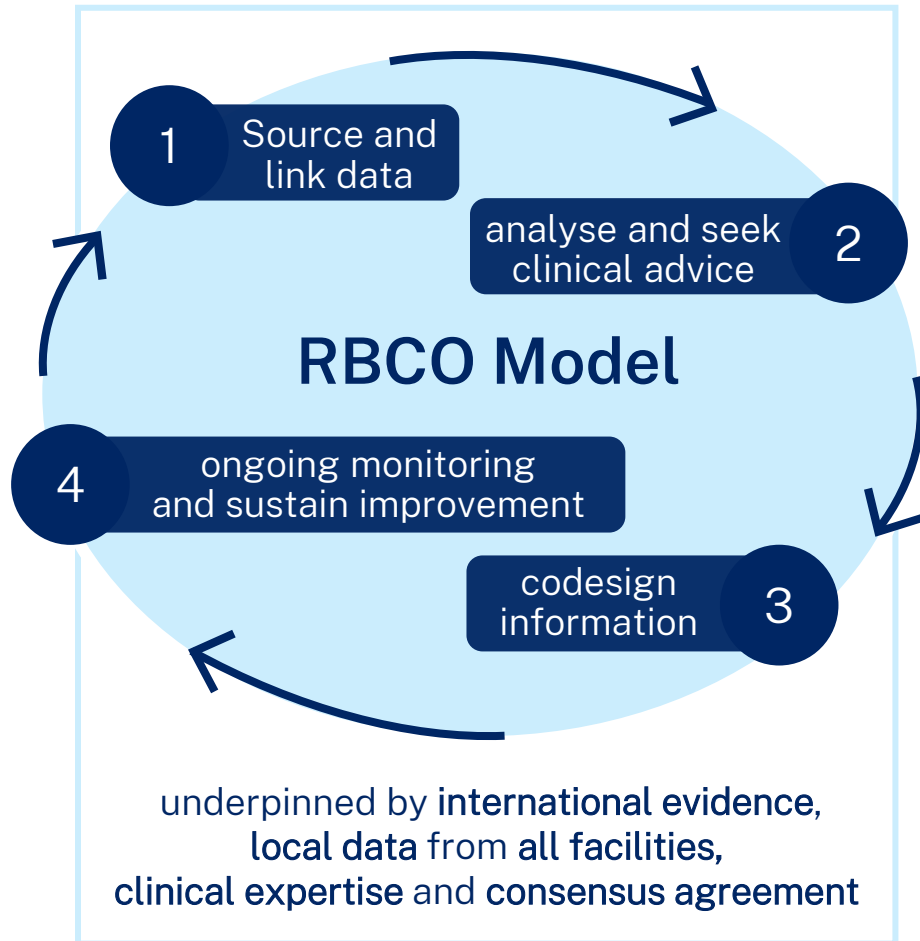
Cancer cohort

- Aboriginality 9%
- 75+ 31%
- Non English speaking COB 4%
- SEIFA 1 and 2 65%
- Regional 100%

Public hospitals total 7
(Dubbo, Orange, Bathurst,
Mudgee, Cowra, Forbes, Parkes)

Private hospitals total 5

Reporting Better Cancer Outcomes (RBCO) - Embedded state-wide QI cancer control program



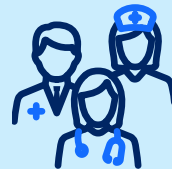
Principles for continuous quality improvement



Best evidence



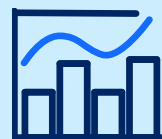
No blame approach



Engagement of managers, clinicians & executives



Raising the general standards of care



Quality data on systems, processes and outcomes



Incremental improvements

Acknowledging system wide engagement



Chief Executive Officers

15 Local health Districts, St Vincents Network,
Justice Health, Sydney Children's Hospital

LHDs Directors Cancer Services

Winston Liau, Dion Forstner, Craig Kukard, Fiona Abell,
Lorraine Chantrill, Nicola Ryan, Tom Shakespeare, Alexander Ingles, Stephen Della-Fiorentina, Ilona Cunningham, Ruth Jones, Melissa Cumming, Paul Harnett, Amanda Stevanovic, Stephen Manly, Chris Ward, Philip Crispin

LHDs Cancer System Innovation Managers

Mel Cook, Peter Freeman, Sarah Elliot, Matthew Hoffman,
Tania Ball, Heidi Roland-Kenn, Nicola Goarke, Sandy Avery,
Kirsty Campbell, Mary Hayes, Traci Cook, Anne Caboche

Clinical Trials Units

Clinical Governance Units

Service Planning Unit

Aboriginal Health Units

Cancer Institute NSW

CEOs, GMs, COOs

Chris O'Brien Lifehouse, Sydney Adventist Hospital, Macquarie University Hospital, Mater, Ramsay Group, Healthscope, ACT Health

CEOs Managers Primary Health Networks

Central & Eastern Sydney, Hunter New England & Central Coast, Murrumbidgee, Nepean Blue Mountains, North Coast, Northern Sydney, South Eastern NSW, South Western Sydney, Western NSW, Western Sydney

Private Radiotherapy Services

ICON, Genesis

NSW Aboriginal Health & Medical Research Council

Aboriginal Community Controlled Health Services

Aboriginal Medical Services

Clinical Advisory Groups

Over 700 senior clinicians across the state



Harnessing data to support the system

Holistic system wide view of a person's journey through the health system



Social determinants equity agenda

- Demographics
- Health conditions
- Socio economic factors



Health system activity

- Clinical treatment activity
 - Hospital activity public and private
 - MBS and PBS



Patient experience

- Patient Reported Measures
- Outpatient Cancer Survey



Population statistics

- NSW Cancer Registry
- Screening cohorts
- Statutory reporting

30+ data sets linked annually across time;

including PLIDA (social, educational financial census migration), MBS, PBS, Clinical, hospital and population-based data sets.

Embedding data to drive system change



Patient
Patient centered care



Health Care Team
Data for improved
decision making



Health System
Benchmarking care quality



Researcher & Policy
Population health
outcomes

Realtime
(At the point of care)

Less data currency →

Use the right data for the right purpose at the right time.

Translating data into actionable intelligence and system improvement by harnessing clinical expertise



We have engaged
Over 770
from NSW /ACT

We currently
have

2,109

users registered
to access RBCO
products on
the portal



25%

of stakeholders were from
allied health, nursing, health
management, research,
primary care and other health
speciality areas



33 grants in total
22 completed, 11 running



1 in 3

stakeholders engaged were
from regional or rural local
health districts

53

We had a total of 53 meetings
With CEOs from LHDs, PHNs, SHNs
and private hospitals in 2023

Continuous engagement throughout the year

211 unique clinician endorsed and validated indicators across 10 domains



August

- PHN reports and snapshots
- Screening and prevention



September

- State-wide report
- Radiation therapy report



October

- Patient reported measures reports
- Aboriginal people in NSW report and snapshots



November

- Pathways reports
- Clinical trials reports



December

- Surgical reports
- CEO summaries/scorecards

NSW Model continuously evolves as cancer complexity increases



Clinical Advisory Groups Time limited activities supported evidence-based consensus

67 project topics

Super specialist services

2 super specialist neuroendocrine services
2 peritoneal services

263 cancer MDTs across NSW

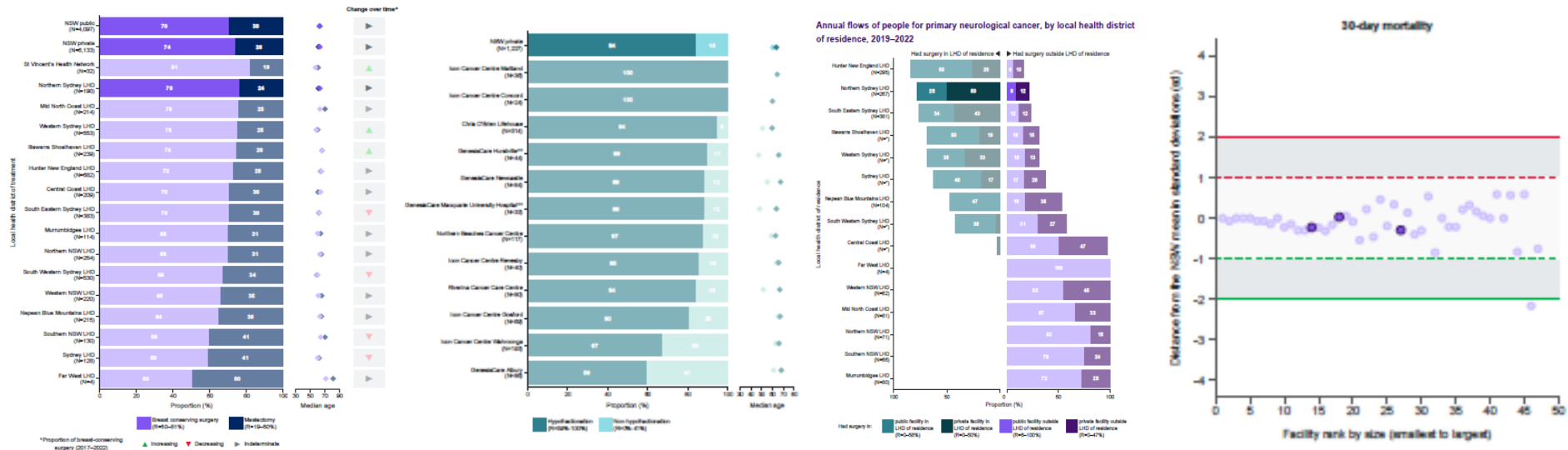
2 Single statewide MDTs
Osteosarcoma
Peritoneal

Specialist services

72 Facilities provide specialist cancer services public and private

All NSW Public and private services participate in annual benchmarking and performance discussions

Each of the agreed 211 indicators are benchmarked to drive optimal care



Mastectomy rates

Hypofractionation Radiotherapy

Patient Flows for treatment

30 day mortality Surgery

Lung cancer

- Reality of the networked model

MDT

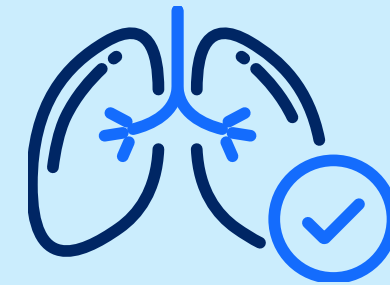
- 1 Royal Prince Alfred and Lifehouse Thoracic Cancer
- 2 Concord Cancer Centre Lung Cancer
- 3 Liverpool-Macarthur Cancer Therapy Centre Lung Cancer
- 4 Hunter New England Lung Cancer
- 5 Nepean Cancer Care Centre Lung Cancer
- 6 Royal North Shore Hospital Lung Cancer

● MDT: specialist hospital ● MDT: non specialist hospitals ● MDT: no lung surgery in LHD

7 LHDs
no longer perform
complex lung
cancer surgery



Formal embedded
networks refer
people to higher
volume services

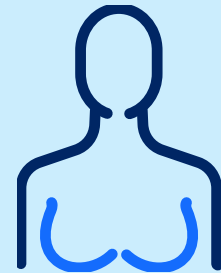


Lung cancer surgical
outcomes have
continued to improve
across the system

Mental Health service users have lower screening rates in all LHDs

Impact

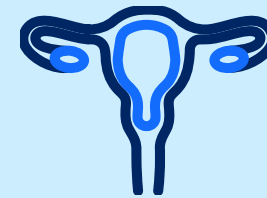
Differences not explained by socioeconomic disadvantage or rural location



Breast

43%

less likely to screen



Cervical

26%

less likely to screen

(16,000 MH users missed screening compared to NSW rate)

Now we are working with our partners to support them to make decisions and develop quality improvement initiatives that are informed by the best available evidence

Actionable data at the bedside in real time elevating the patient and carer voice

Impact



Earlier referrals for supportive care



Reduced ED admissions



Identifying unmet needs



Redesigned models of care

Realtime linkage across the cancer service activity

Placing insights from the data in the hands of the people who need it when they need it

Drug Dose Variation (C1/D1 Only)

Variance defined as Ordered dose that differs from MOSAIQ calc'd dose. The dose adjusted variation level is set by the query parameter. Select the "Treatment" model -> Transform Data -> Edit Parameters.

10%
Dose Variance

Date: 1/01/2020 to 31/05/2023
 Diagnosis: All
 Careplans: All
 Ordering Doctor: All
 Intent: All

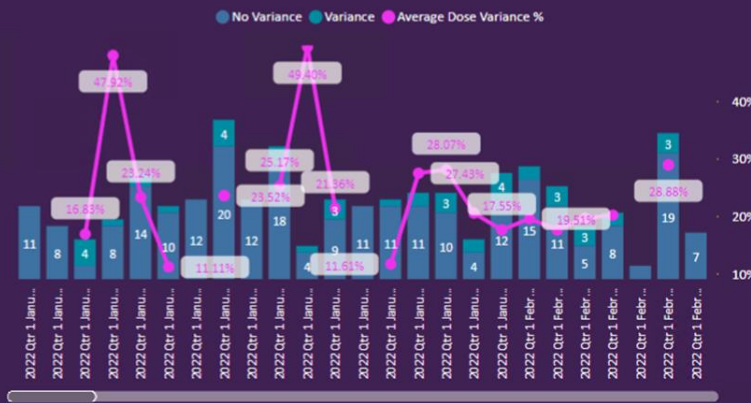
No Calc No Variance Variance



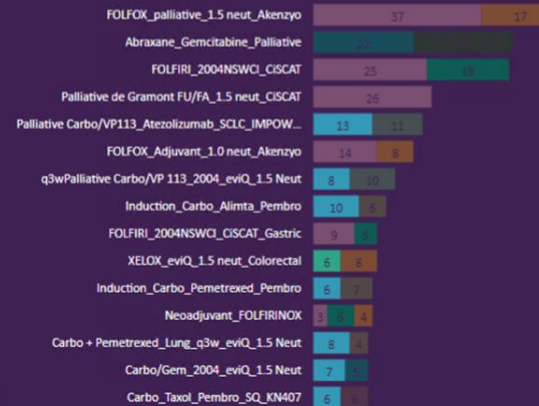
14.34K
Total Orders

No Variance Variance Average Dose Variance %

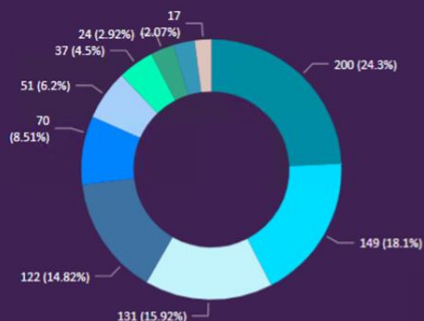
Orders by Date



Top 20 Careplans with Dose Variations



Dose Variance Reasons by Ordering Dr



Adj_Reason1 (groups)

- xNo Adj Reason
- Toxicity
- Age
- Pref Status
- BSA
- Prior Therapy
- Bloods
- Rounding
- Weight Loss
- Pt Pref.

Dose Variance Reasons by Ordering Dr

Dr_ID	Age	Bloods	BSA	Pref Status	Prior Therapy	Pt Pref.	Rounding	Toxicity	Weight Loss	xNo Adj Reason	Total
108			2		1			1	6	1	10
110	1	1						2	1		7
179	2										2
245									9		9
246									6		6
276	2				1		1		1		5
331	6	1						9	25		41
366									2		2
433	11	5	8	9	10		6	8	1	2	60
435	4	3	4	11	1	3		6		1	33
666			1		1	3	1	1	1		9
874				2			2			3	7
923	1	2	10	1	3		2	5		2	26
Total	131	37	70	122	51	17	24	149	22	200	823



Health Care Team
Real time data for improved decision making

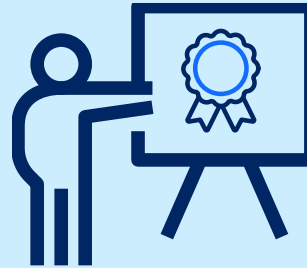
Supporting the workforce through education

1.1m
users

224
countries

eviQ Point of care safety information embedded nationally with global reach

Cancer research education and career development

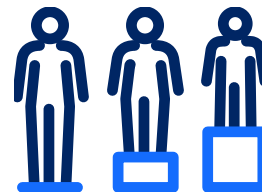


Educational molecular tumour boards



Innovations and research conferences

eviQ Education 122,000 users



Bowel and Cervical Health worker training

Cancer Conversations webinars



LHDs Strategic cancer leadership position



Screening programs Multicultural and Aboriginal health worker training



Prevention education smoking cessation Primary Care Webinars and tool kits

Investing in clinical trials



Everyone

should have the opportunity to consider a clinical trial as part of their cancer treatment.

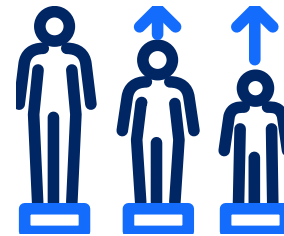


Over **2,000** cancer patients enrolled each year.



Over **430** FTE dedicated to cancer clinical trials.

80 cancer clinical trial units.

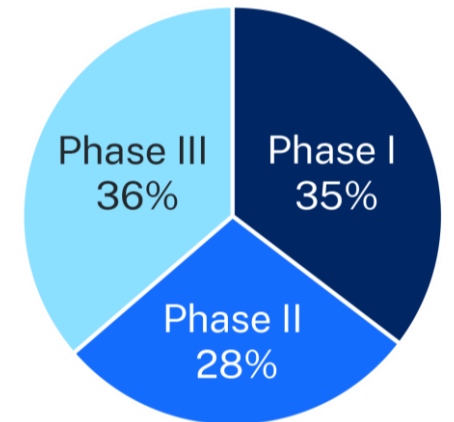


Equity of ACCESS



Over 760 unique cancer clinical trials. Growth of **38%** over 5 years.

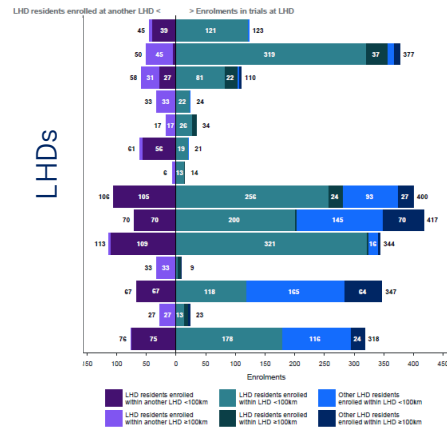
Current breakdown of Cancer Clinical Trials in NSW



Improving performance and access to clinical trials

Visibility of 2,561 participants enrolled in 2022-2023

Trial participant flow, by local health district of trial location and distance travelled to trial location, 2022–2023 FY

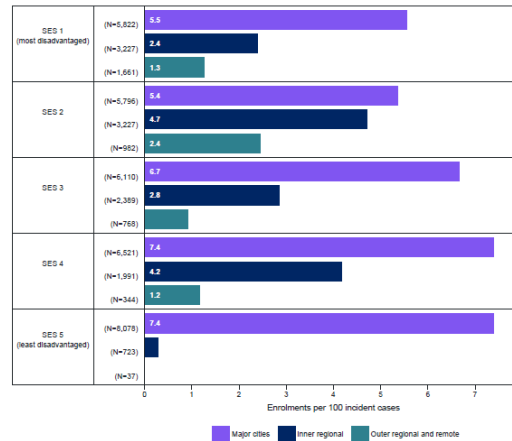


Trial participant travel distance to site in NSW in 2022–2023 FY

Participant Residence	Median Distance Travelled (km)	Participants travelling <100km	Participants travelling >100km
Inner regional	104.4	179	203
Major cities	13.4	2,055	65
Outer regional and remote	364.3	9	47
Total	127.7	2,243	315

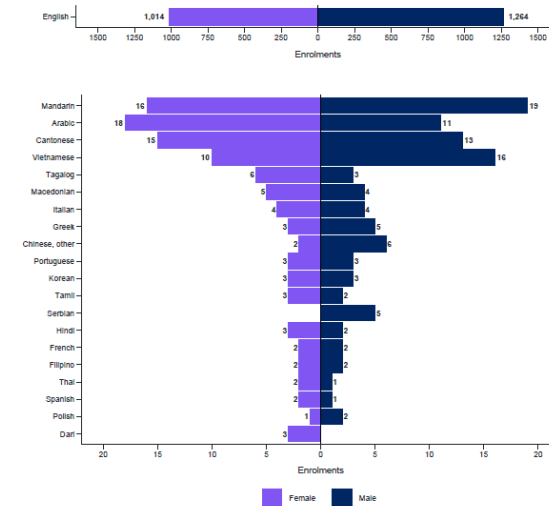
Distance travelled

Ratio of enrolments to cancer incidence (per 100 cases) in NSW, by level of socioeconomic disadvantage and remoteness, 2022–2023 FY



SES

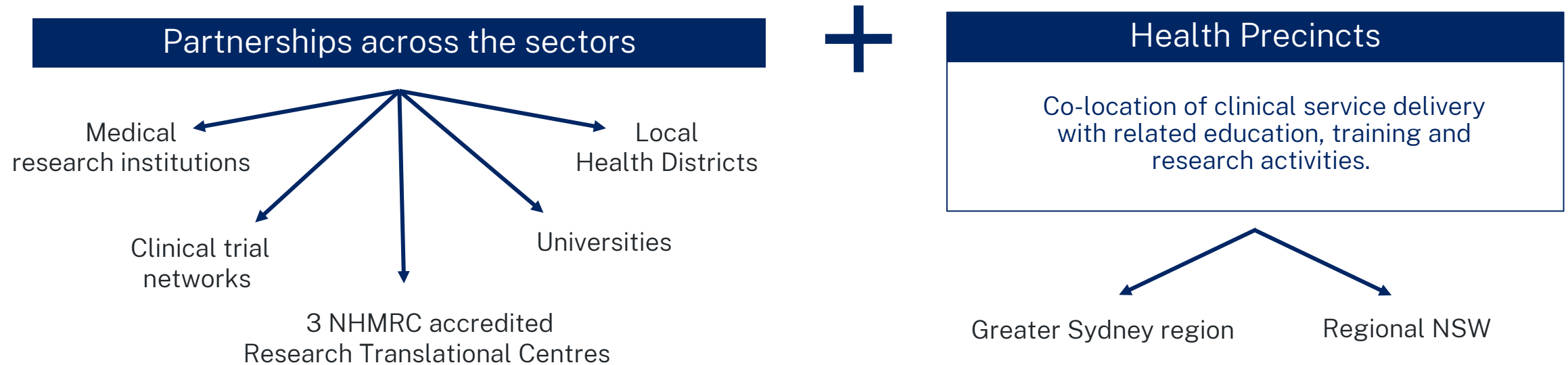
Number of enrolments into cancer clinical trials in NSW, by main language spoken at home and sex, 2022–2023 FY



CALD

Building equitable access

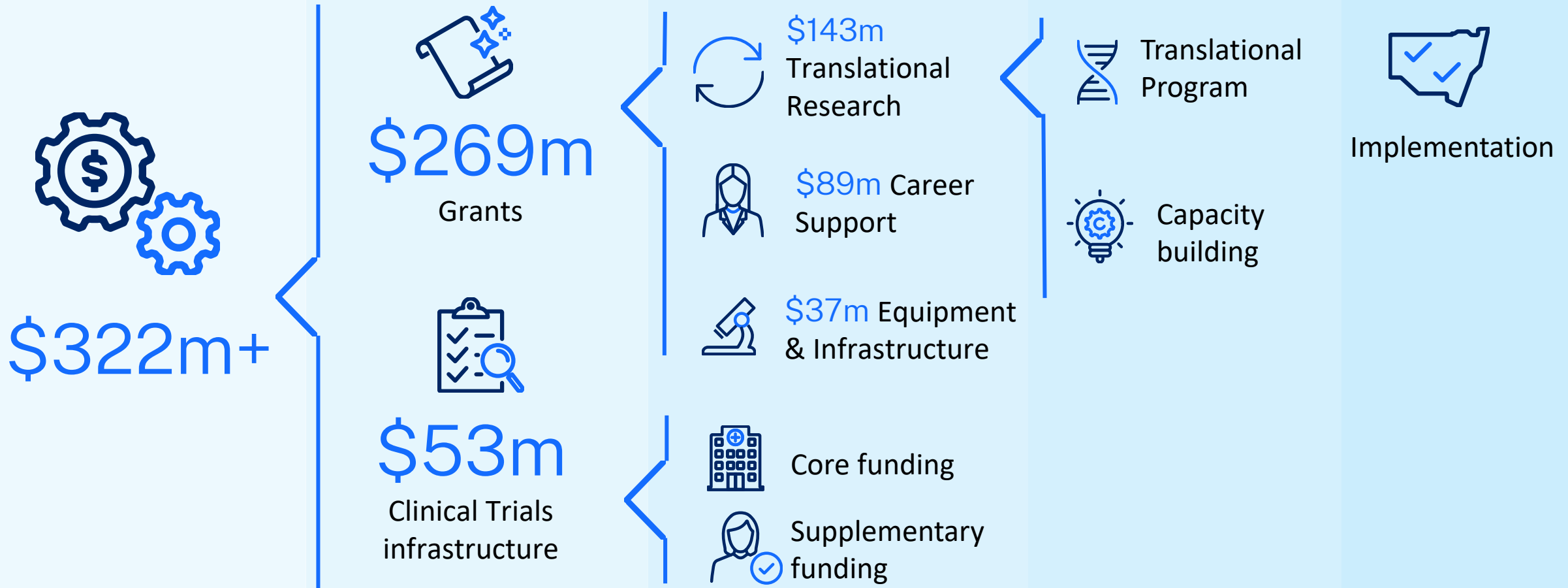
Comprehensive networked research ecosystem driving translation into clinical practice



Collaboration Benefits

- ✓ Improved research impact
- ✓ Accelerated discovery
- ✓ Resource sharing
- ✓ Faster translation and implementation
- ✓ Consumer & Community engagement.

Investing in cancer research and development



Thankyou



Central Coast Local Health District,
Far West Local Health District,
Hunter New England Local Health District,
Illawarra Shoalhaven Local Health District,
Murrumbidgee Local Health District,
Mid North Coast Local Health District,
Northern Sydney Local Health District,
Northern NSW Local Health District,
Nepean Blue Mountains Local Health District,
Sydney Local Health District
South Eastern Sydney Local Health District,
Southern NSW Local Health District,
South Western Sydney Local Health District,
Western NSW Local Health District,
Western Sydney Local Health District,

Questions?



Tracey O'Brien
NSW Chief Cancer
Officer | Chief Executiv...



[Linkedin.com/in/drtraceyobrien](https://www.linkedin.com/in/drtraceyobrien)



Tracey.OBrien@health.nsw.gov.au



[@drtraceyobrien](https://twitter.com/drtraceyobrien)