

Incidence, stage and treatment for Prostate Cancer Patients within Sydney South West Area Health Service public facilities

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Background and Scope

The Sydney South West Area Health Service (SSWAHS) provides health services to an estimated population of 1.4 million residents. The SSWAHS Clinical Cancer Registry program is funded by the New South Wales Cancer Institute (CINSW) to collect detailed information and monitor trends in diagnosis, stage, treatment and quality of care, from public hospital source systems for patients diagnosed with cancer on or after 1st July 2005.

Specialty tumour groups are involved in analysis of this data for quality assurance and to improve source data.

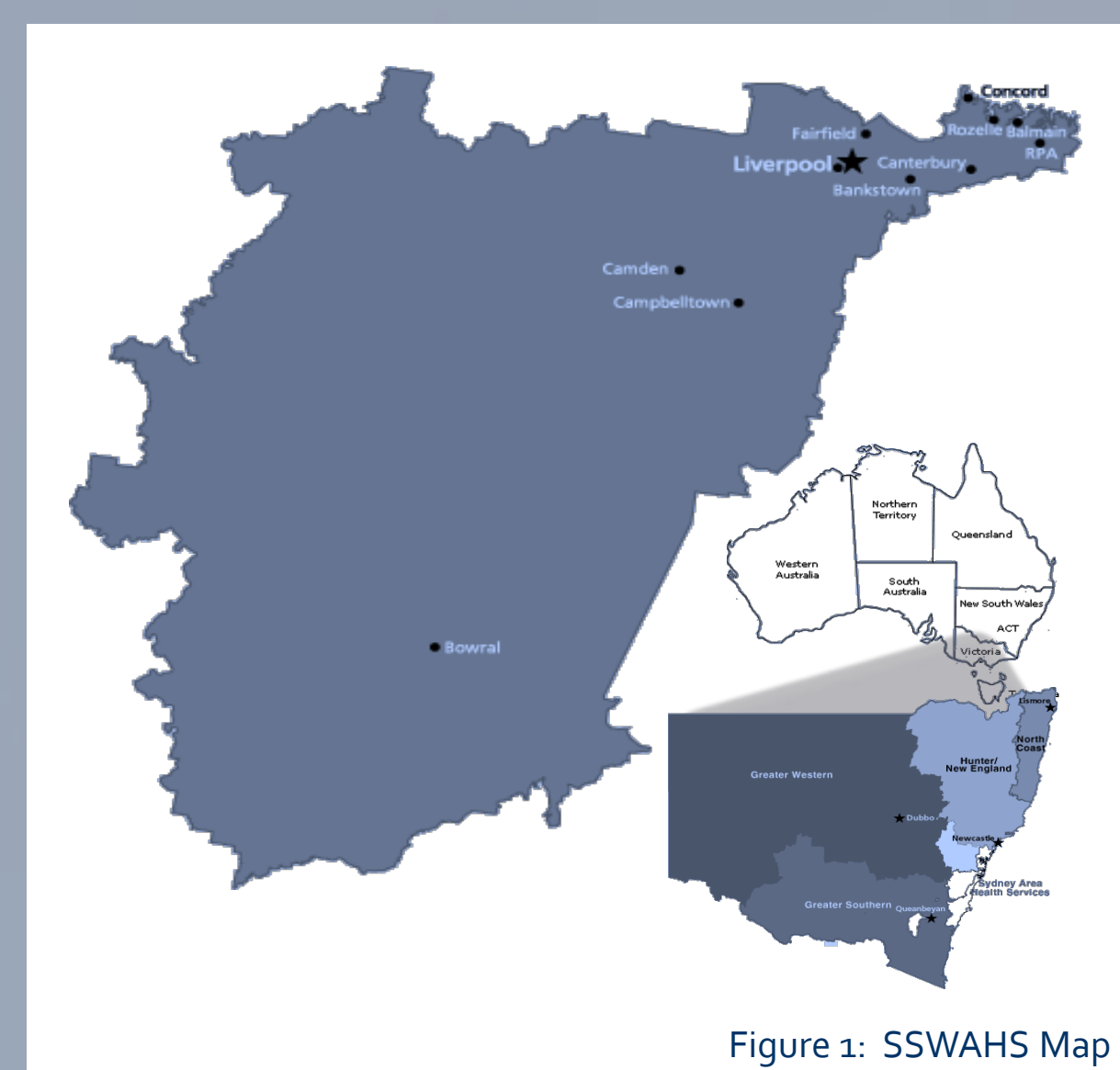


Figure 1: SSWAHS Map

- The NSW Central Cancer Registry population data¹ reported:
- In 2007, 36,043 people were diagnosed with invasive cancer in NSW
 - Males were 1.5 times more likely to be diagnosed with cancer than females
 - Prostate cancer is responsible for 32% of all new cancers for men
 - Incidence rates for prostate cancer have increased sharply
 - Prostate cancer incidence rates appear related to the prevalence of prostate-specific antigen (PSA) testing in the community

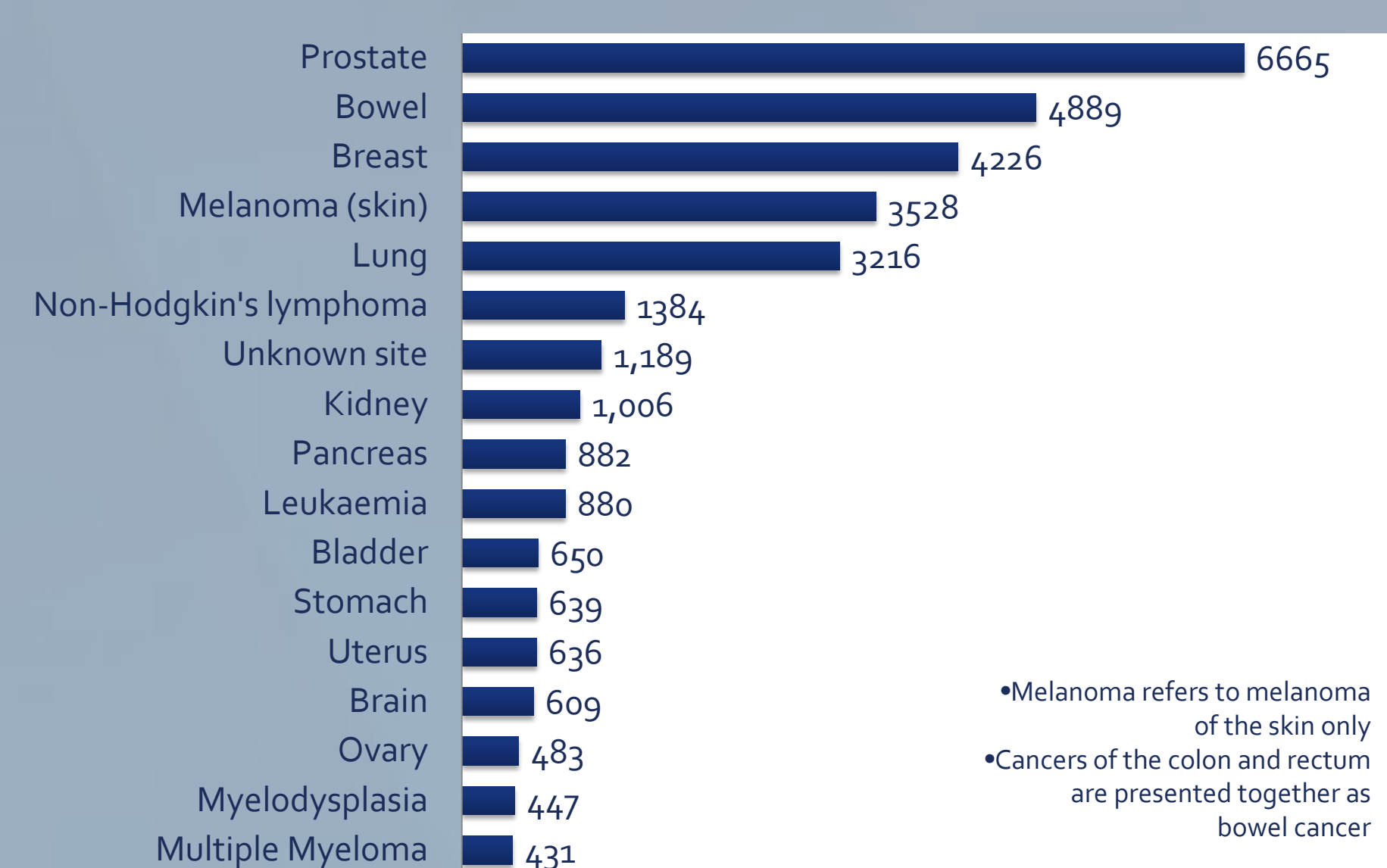


Figure 2: New cases of Cancer in Persons, NSW, 2007

- In 2007, prostate cancer accounted for 977 (7%) deaths
- By 2021, projected numbers of cancer diagnosed in NSW is expected to rise to 50,736, an increase of 42% between 2007 and 2021
- The increase in cancer cases is largely explained by increases in the population, especially in the older age groups where cancer incidence is at its highest
- Prostate cancer is projected to increase as a proportion of total cases from 18% of new cases in 2007 to 19% of new cases in 2021, with 9,846 cases
- In 2021, one of the most common cancers overall are projected to be cancers of the prostate.

Method

The SSWAHS Clinical Cancer Registry data was used to examine prostate cancers receiving definitive radiotherapy, to establish if the data collected reflected recommended radiotherapy dosages.

This report extracted all cases with a diagnosis of Prostate Cancer (within the scope of the SSWAHS Clinical Cancer Registry) in 2007. Prostate cancer cases were stratified into low, intermediate and high risk groups using PSA, Gleason score and Clinical T stage.

The treatments delivered were then compared with the recommended treatment guidelines as agreed by the Urogenital New South Wales Oncology Group (NSWOG), as documented on the CINSW eviQ Cancer Treatment Online website.

Evidence based guidelines for radiotherapy treatment of prostate cancer, as recommended by the CINSW – eviQ Cancer Treatments Online² is:

Low Risk
Definitive external beam radiotherapy (EBRT) prescribed at 70-78Gy in 1.8-2Gy/fraction.

Intermediate risk
Definitive EBRT prescribed at 70-78Gy in 1.8-2Gy/fraction.

High Risk
Definitive EBRT prescribed at 74-78Gy in 1.8-2Gy/fraction with concurrent Androgen Deprivation Therapy.



Results

Incidence

513 prostate cancers were identified in SSWAHS making it the most common cancer occurring in the local male population and the 6th most common cancer overall in the area in 2007, with 28% of treated patients residing outside the catchment area.

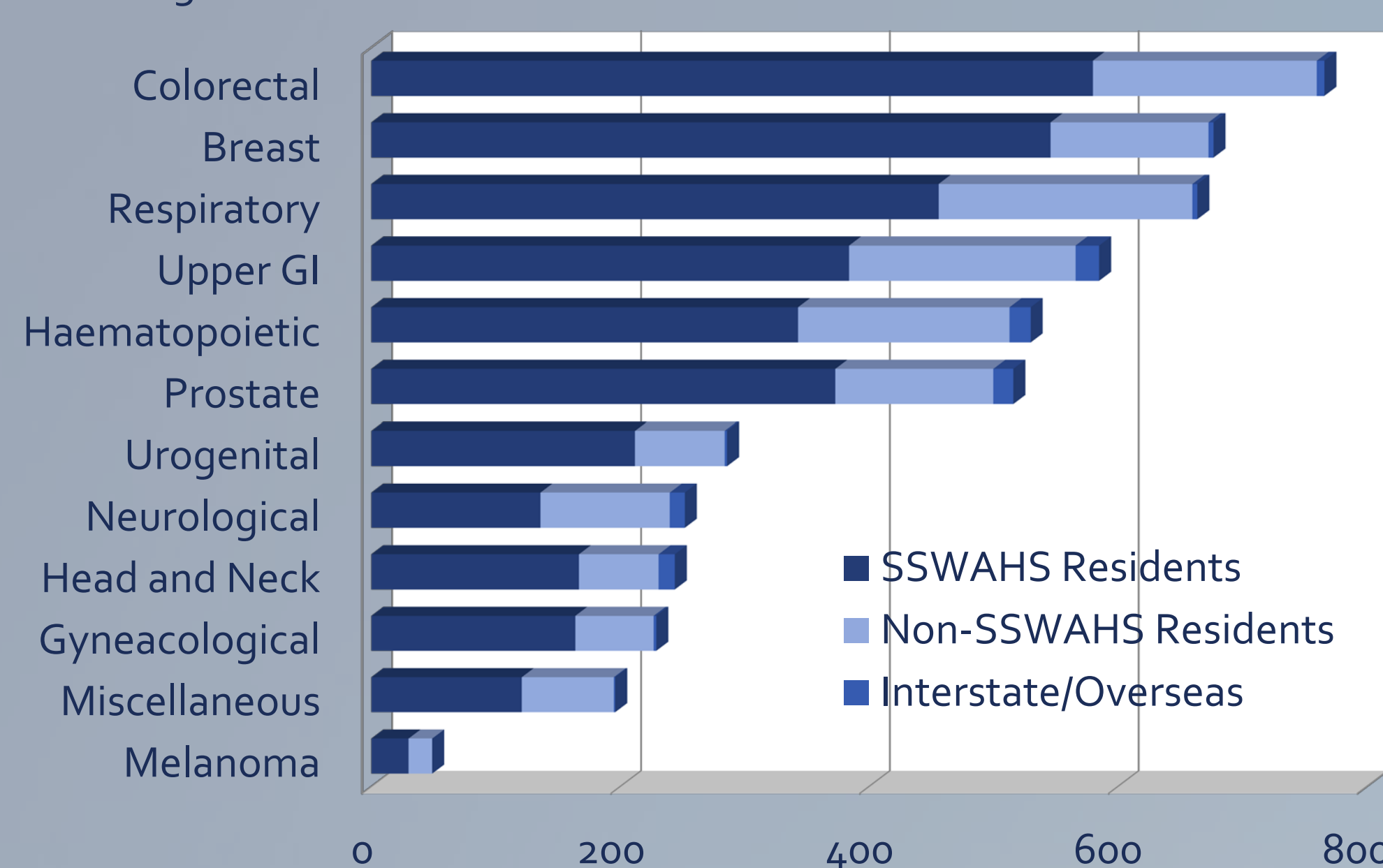


Figure 3: Tumour Groups by Residence, SSWAHS, 2007

Demographics

The average age at diagnosis was 69 with the range 42 to 93 years.

Age at Diagnosis	n = 513	%
40-49	9	2%
50-59	72	14%
60-69	192	37%
70-79	186	36%
80-89	49	10%
90+	5	1%

Table 1: Age at diagnosis

The most common country of birth for prostate cancer patients was Australia (43%) and of those born overseas most were born in Europe (23%) or Asia (13%).

Country of Birth	n = 513	%
Australia	219	43%
Europe	120	23%
Other	96	19%
Asia	65	13%
Unknown	13	2%

Table 2: Country of birth

Staging

The most common (37%) PSA result prior to diagnosis of prostate cancer was less than or equal to 10 (n=188).

PSA	n = 513	%
<=10	188	37%
10-20	127	25%
21-50	56	11%
>51	38	7%
Unknown	104	20%

Table 3: PSA

The most common (48%) Gleason score at diagnosis of prostate cancer was 7 (n=246). Although similar numbers of cases were diagnosed with a Gleason score of 3+3=6 (144) and 3+4=7 (147).

Gleason Score	n = 513	%
4	4	1%
5	3	1%
6	148	29%
7	246	48%
8	41	8%
9	43	8%
10	4	1%
Unknown	24	4%

Table 4: Gleason score

The most common (17%) clinical T stage at diagnosis of prostate cancer was T1c (n86). Although 49% of cases were missing a clinical T stage. Local tumour groups are working to improve documented staging.

Clinical T Stage	n = 513	%
x	7	1%
1	1	0%
1a	1	0%
1b	4	1%
1c	86	17%
2	9	2%
2a	33	6%
2b	54	10%
2c	19	4%
3	27	5%
3a	15	3%
3b	3	1%
4	3	1%
Unknown	251	49%

Table 5: Clinical T stage

Risk

The median age at diagnosis was compared with the PSA, Gleason score and Clinical T stage to determine the risk stratification, resulting in 6% stratified as low risk (n=29), 43% stratified as intermediate risk (n=204) and 32% stratified as high risk (n=154).

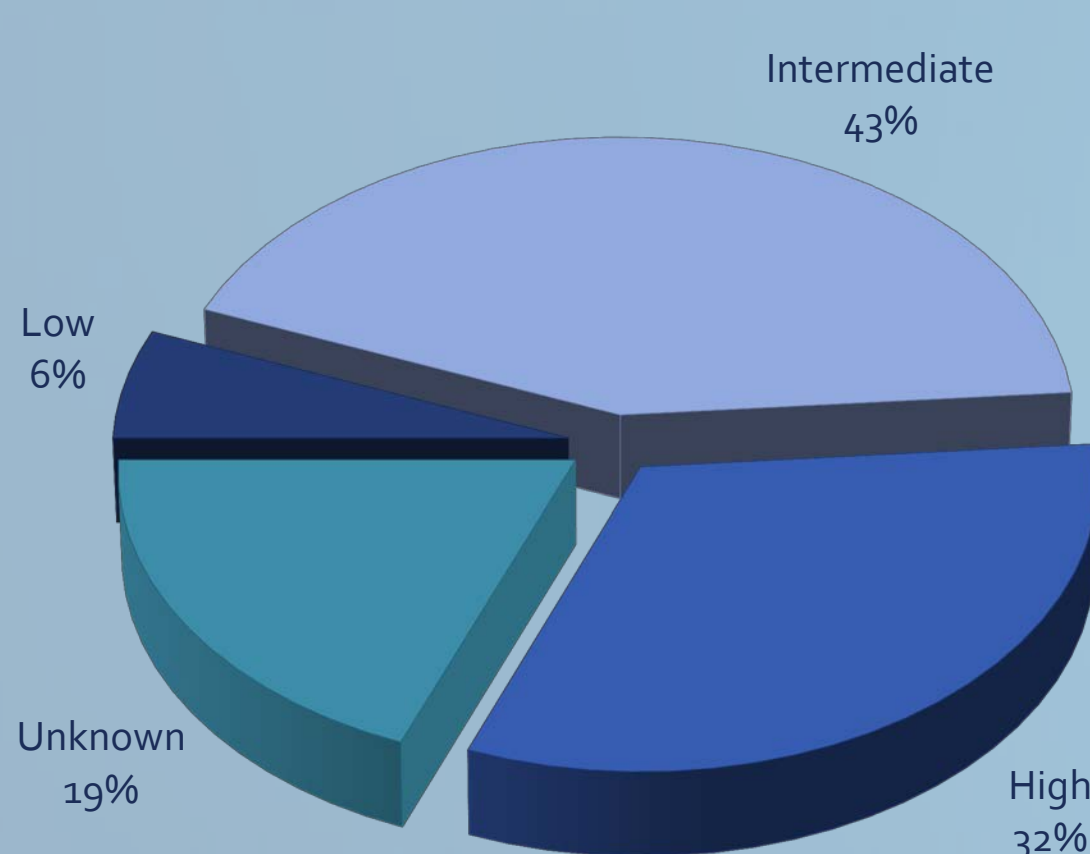


Figure 4: Risk stratification

Risk	n = 478	%
Low	29	6%
Intermediate	204	43%
High	154	32%
Unknown	91	19%

Table 6: Risk stratification

Treatment

68% of patients received treatment for their prostate cancer in SSWAHS public facilities.

- 23% received a Prostatectomy (n=119)
- 11% received Radiotherapy only (n=56)
- 34% received Radiotherapy and Hormones (n=172)

Treatment	Total n = 347	Low n = 22	Inter mediate n = 171	High n = 114	Unknown n = 40
Surgery	119	9	56	17	37
Radiotherapy	56	13	38	4	1
Radiotherapy & Hormones	172	0	77	93	2

Table 7: Treatment distributed by risk

23% of patients had a Radical Prostatectomy (n=119) with the most common prostate cancer patient being of intermediate risk and aged between 50 and 69.

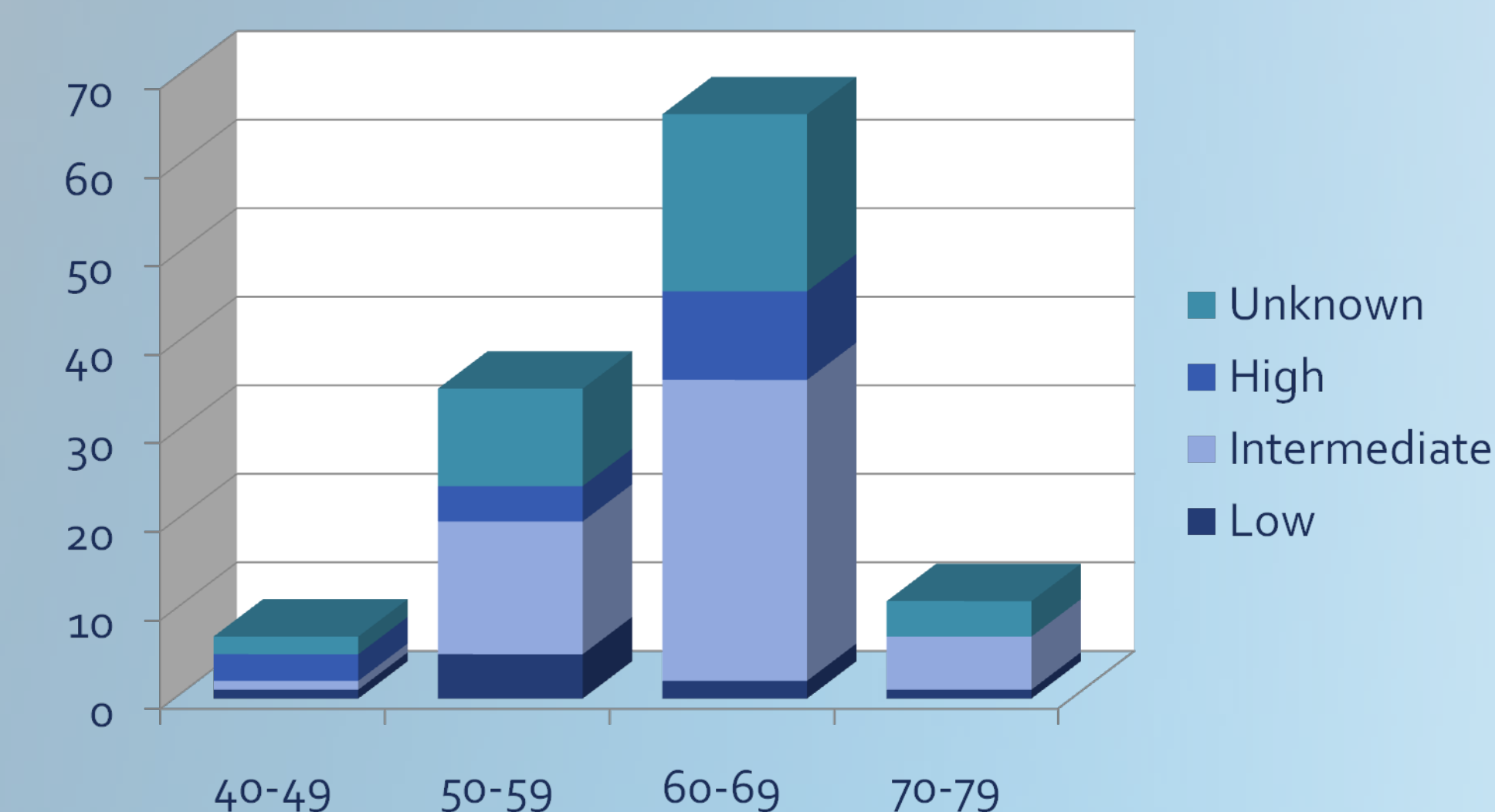


Figure 5: Age distribution by risk for Surgery patients

45% of patients received definitive radiotherapy +/- hormones (n=228). The most common prostate cancer patient was of intermediate risk and aged between 60 and 79 years of age.

100% of patients stratified as low risk received EBRT at the recommended dose.

Of the patients stratified as intermediate risk 79% received EBRT at the recommended dose. The other 21% of patients received high dose brachytherapy +/- EBRT, which is an acceptable and equivalent treatment to EBRT only.

Of the patients stratified as high risk 39% received EBRT at the recommended dose and 18% received high dose brachytherapy +/- EBRT, which is an acceptable and equivalent treatment to EBRT only. 44% received EBRT with a dose between 70 – 73Gy, which is lower than the recommended dose. 96% of high risk patients received concurrent androgen deprivation therapy together with EBRT.

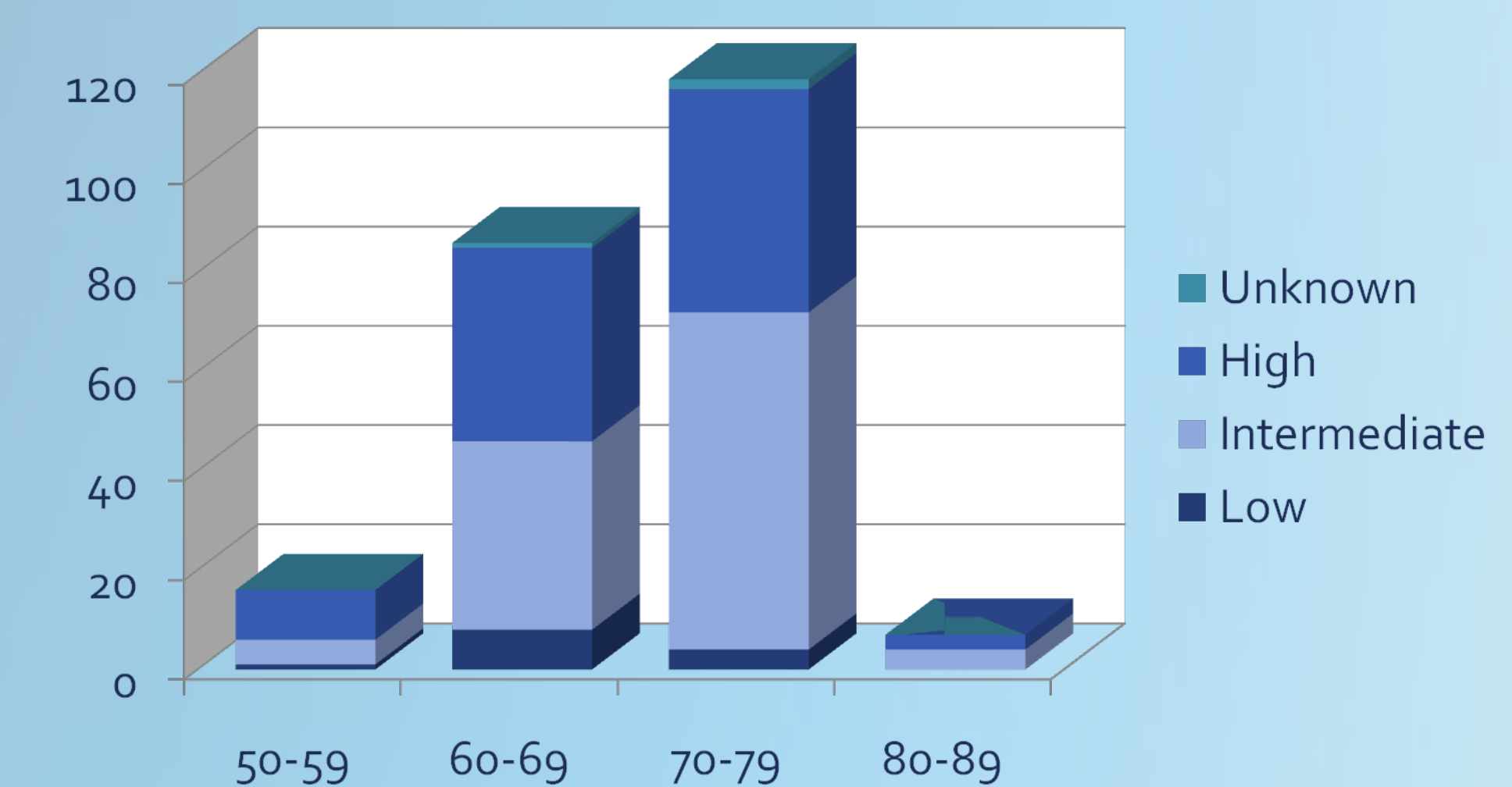


Figure 6: Age distribution by risk for Radiotherapy patients

Conclusion

The SSWAHS Clinical Cancer Registry data collection and analysis demonstrated that all of the low and intermediate risk and a majority of the high risk prostate cancer patients who received external beam radiotherapy within this area health service received treatments that aligned with the recommended definitive radiotherapy treatment dose, as recommended by the Urogenital New South Wales Oncology Group.

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Acknowledgement

Thanks to Dr Mark Sidhom for his support and clarification of clinical issues.

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