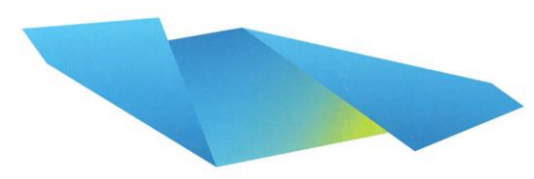


Radiotherapy underutilisation in NSW, Australia and its impact on local control and survival

WESTERN SYDNEY UNIVERSITY



Ingham Institute
Applied Medical Research

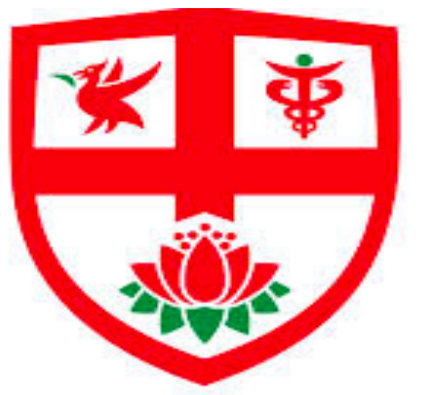
Authors:

Roya Merie^{a, c}, Gabriel Gabriel^{b, c}, Jesmin Shafiq^{b, c}, Shalini Vinod^{a, c}, Michael Barton^{a, b, c}, Geoff Delaney^{a, b, c}

Affiliations:

^aLiverpool Cancer Therapy Centre, NSW, Australia; ^bCollaboration for Cancer Outcomes Research and Evaluation, Ingham Institute for Applied Medical Research, NSW, Australia; ^cSouth Western Sydney Clinical School, University of New South Wales, NSW, Australia

Health
NSW GOVERNMENT
South Western Sydney
Local Health District



LIVERPOOL HOSPITAL

BACKGROUND

45% of cancer patients should receive radiotherapy (RT) within 1 year of their diagnosis as per evidence-based estimates (1). Data from NSW in 2004-2006 showed that only 22% of cancer patients actually received RT (2).

PURPOSE

1. Identify actual radiotherapy utilisation (RTU) rate in NSW and compare this to the estimated optimal and to the previously reported RTU rates in NSW in 2004-2006.
2. Calculate impact of RT underutilisation on local control (LC) and overall survival (OS).
3. Identify patient, treatment, tumour and health service related factors that could impact on RTU.

MATERIALS AND METHODS

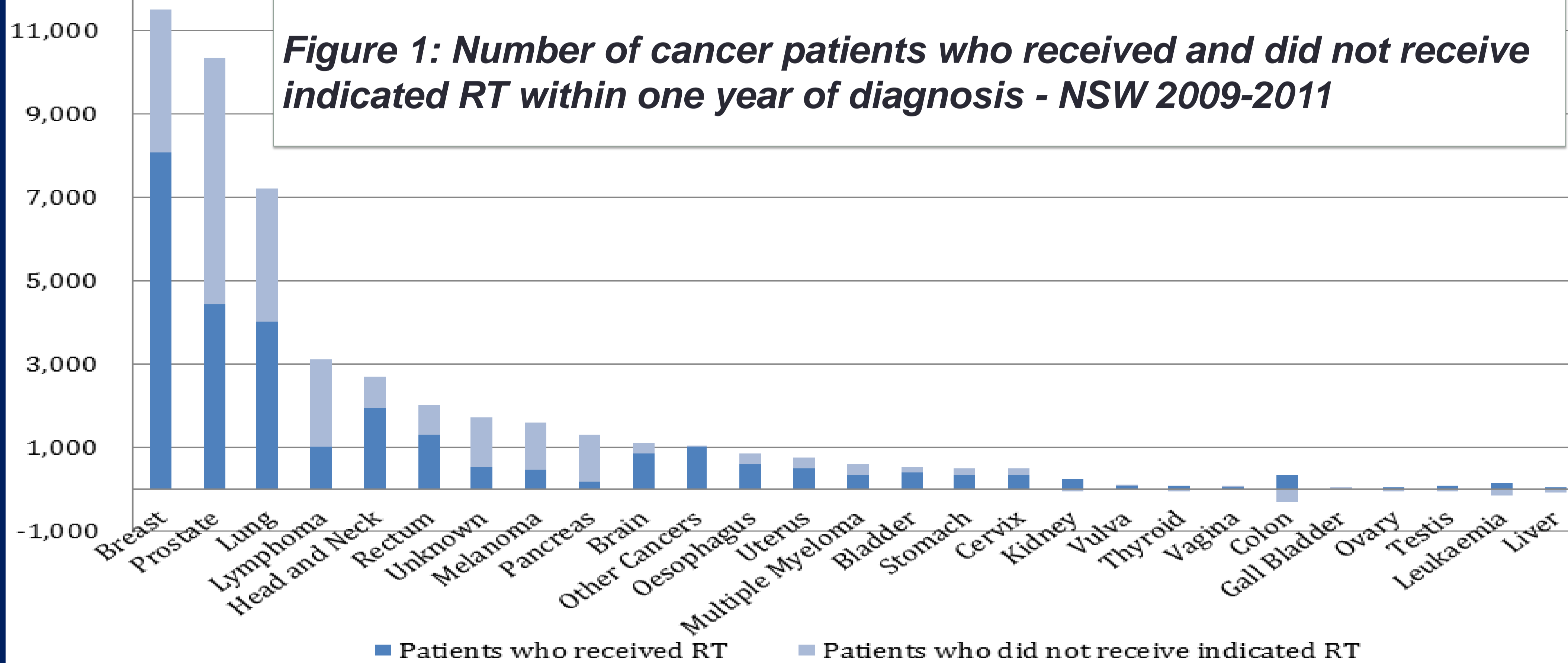
Cancer cases diagnosed in NSW between 2009-2011 were identified from NSW Cancer Registry and linked with data from all RT departments. Calculated actual RTU rate was compared with the optimal and the deficit in RT use for each indication was used to calculate 5-year OS and LC shortfall. Univariate and multivariate analyses identified factors that correlated with reduced RTU.

RESULTS

- Of all 110,645 cancer cases identified, 25% received RT within one year of diagnosis (vs 45% optimal).
- Greatest deficit in RTU was seen in breast cancer followed by prostate, lung and lymphoma (figure 1)
- “Missed” radiotherapy resulted in
 - 365 cases with reduced 5-year survival per year
 - 1687 local recurrences per year
- RT underutilisation was significantly associated with:
 - older age (figure 2)
 - male gender
 - localised disease
 - living in most disadvantaged areas
 - increasing distance to nearest RT facility (table 1).

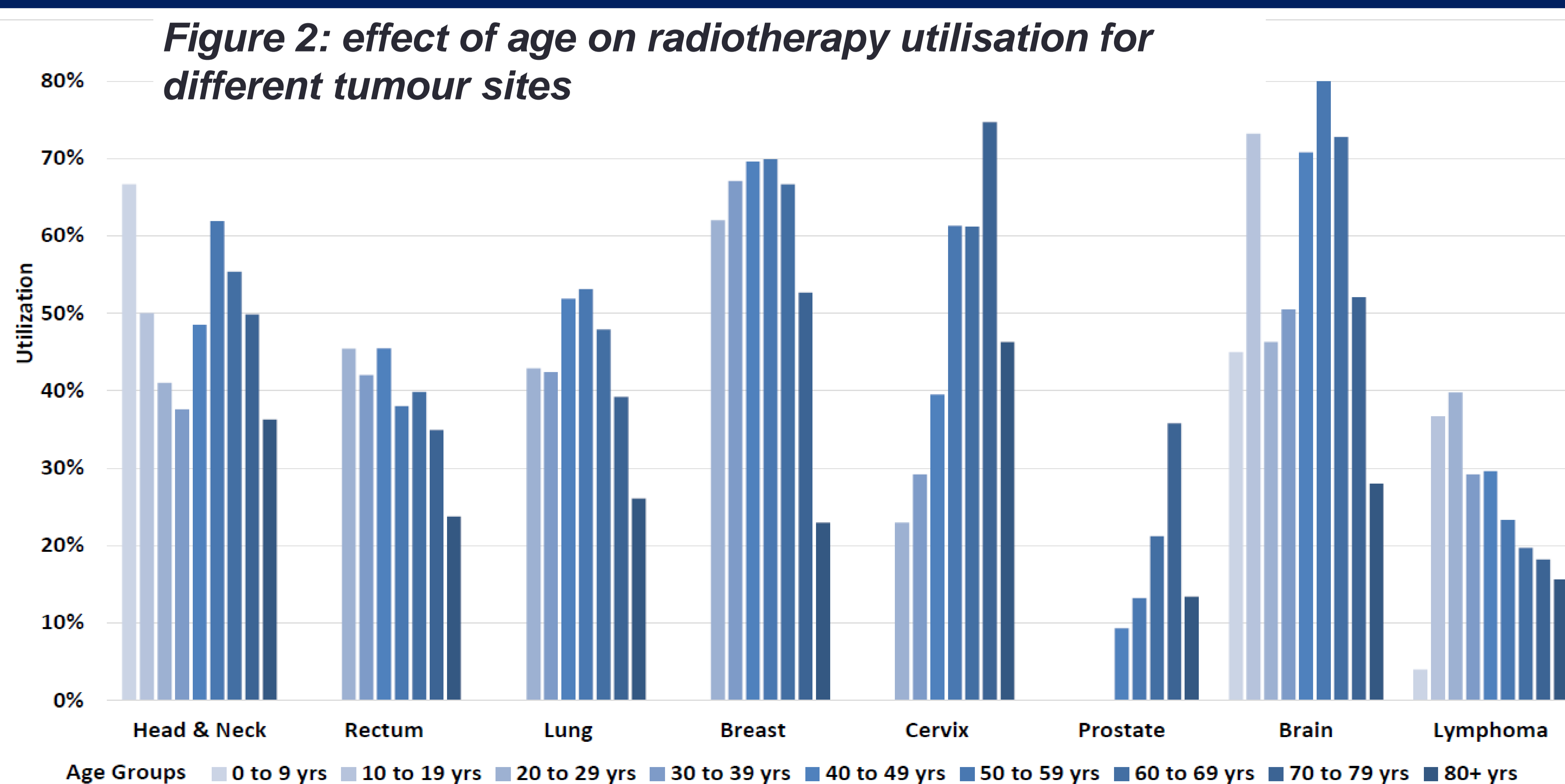
CONCLUSION

LC and OS shortfall due to RT underutilisation is a significant finding. Multifaceted strategies targeting consumers, referring doctors and health authorities are urgently needed to improve RTU and subsequently cancer outcomes.



Distance Group	% Total	1-year RTU
<50 km	82%	26%
50-99 km	8%	23%
100-149 km	4%	22%
150-199 km	2%	22%
200+ km	3%	18%
Total	100%	25%

Table 1: Patient accessibility and effect of travel distance on 1-year RTU in 2009-2011



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