

# Australia and New Zealand's responsibilities in improving oncology services in the Asia-Pacific: A call to action

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## Abstract

**Aim:** To review the expected increasing demand for cancer services among low and middle-income countries (LMICs) in the Asia-Pacific (APAC), and to describe ways in which Australia and New Zealand (ANZ) can provide support to improve cancer outcomes in our region.

**Methods:** We first review the current and projected incidence of cancer within the APAC between 2018 and 2040, and the estimated demand for chemotherapy, radiotherapy and surgery. We then explore potential ways in which ANZ can increase regional collaborations to improve cancer outcomes.

**Results:** We identify 6 ways that ANZ can collaborate with LMICs to improve cancer care in the APAC through the ANZ Regional Oncology Collaboration Strategy:

1. Increasing education and institutional collaborations in the APAC region through in-country training, twinning partnerships, observerships and formalised training programs in order to increase cancer care quality and capacity.
2. Promoting and assisting in the establishment and maintenance of population-based cancer registries in LMICs.
3. Increasing research capacity in LMICs through collaboration and promoting high quality global oncology research within ANZ.
4. Engaging and training Australian and New Zealand clinicians in global oncology, increasing awareness of this important career path, and increasing health policy engagement.
5. Increasing web-based endeavours through virtual tumour boards, web-based advocacy platforms and web-based teaching programs.
6. Continuing to leverage for funding through professional bodies, government, industry, not-for-profit organisations and local hospital funds.

**Conclusion:** We propose the creation of an Australian and New Zealand Interest Group to provide formalised and sustained collaboration between researchers, clinicians and stakeholders.

## KEYWORDS

cancer care in the Asia-Pacific, global oncology, regional cancer collaborations

## 1 | INTRODUCTION

Cancer incidence is rising globally and is expected to reach 26 million by 2040, with 70% of new diagnoses occurring in low and middle-income countries (LMICs).<sup>1</sup> LMICs face enormous challenges in meeting the needs of cancer patients as they work within the constraints of limited health budgets and resources. Case fatality has been estimated as high as 75% in LMICs, compared to 46% in high-income countries like Australia and New Zealand (ANZ).<sup>2</sup>

High-income countries within the Asia-Pacific (APAC) can play an important role in improving access to care for all persons with cancer regardless of country of origin or economic group. Increased collaboration is needed to build this capacity in the coming decades. Global oncology was a central theme of the recent Clinical Oncology Society of Australia (COSA) Annual Scientific Meeting,<sup>3</sup> highlighting the growing interest in this field. Several high-income countries have developed agendas to promote cancer care in LMICs.<sup>4</sup> A recent survey by the National Cancer Institute of the United States found that over 90% of designated cancer centres were engaging in global oncology activities, including training partnerships and research.<sup>5</sup> In contrast, ANZ has no centralised interest group or formalised mission statement in global oncology. Scientific societies have also increased their focus towards global oncology, with ASCO developing a Global Oncology Leadership Taskforce,<sup>6</sup> mentoring programs<sup>7</sup> and creating the JCO Global Oncology publication.

In this paper, we review the growing demand for cancer services among LMICs in the APAC and describe ways in which ANZ can provide leadership. While we focus on ANZs engagements in global oncology, we encourage other high-income countries within the APAC to develop similar agendas with a commitment to regional collaborations.

## 2 | THE APAC REGION AND EXPECTED CANCER RISE 2018-2040

The definition of APAC varies depending on the economic and political context. It encompasses approximately 47 countries depending on the definition used, many of which are small island nations with limited cancer services. Of these 47 countries, 34 are included in GLOBOCAN 2018<sup>1</sup> predictions of cancer incidence (Table 1); nine are classified as high-income, six as upper-middle income, seventeen as low-middle income and two as low-income according to the World Bank Economic Rankings 2018<sup>8</sup> (Table 1). Of the nine high-income countries, Australia, New Zealand, South Korea, Japan and Singapore have well-established cancer programs and sufficient resources to develop regional partnerships. Guam, New Caledonia, French Polynesia and Brunei Darussalam have limited capacity to provide regional support due to small size.

By 2040, cancer incidence in the APAC region, excluding non-melanomatous skin cancers, is projected to rise to 12.6 million, equating to 48.7% of total global cancer incidence.<sup>1</sup> Of these 12.6 million cases, 87% will occur in LMICs. Compared to a global incidence in LMICs of 70%, our region has a disproportionate number of new cases arising in LMICs.

## 3 | CHEMOTHERAPY, RADIOTHERAPY AND SURGERY DEMANDS IN THE APAC REGION

We calculated the chemotherapy, radiotherapy and surgery demands for each country in the APAC region using methods previously published<sup>9-11</sup> (Table 1). Of the 9.8 million new cases of cancer needing chemotherapy globally in 2018, 50% (4.9 million) are in the APAC region, and 84.4% of these patients live in LMICs. By 2040, the global demand for chemotherapy will rise to 15 million people, of whom 7.7 million (51%) will reside within the APAC region and 87.1% of these patients will reside in LMICs (Figure 1).

In 2018, 8.2 million people would benefit from radiotherapy globally, of whom 46% (3.8 million) reside in the APAC region, and 85% of these patients live in LMIC. By 2040, 12.4 million people would benefit from radiotherapy, of whom 48% (6 million) will reside in the APAC region, and 87.8% of these patients will live in LMICs (Figure 1).

The number of cancer patients with an indication for surgery in 2018 was 9.6 million, of whom 49% (4.7 million) reside in APAC region, and 83% of these patients live in LMICs. By 2040, the global number of patients with an indication for surgery will rise to 14.1 million, of whom 7.3 million (52%) will reside in the APAC region, and 6.3 million of these patients (86%) will be from LMIC (Figure 1).

## 4 | AUSTRALIA AND NEW ZEALAND'S POTENTIAL ROLE

ANZ have world class cancer systems, with 5-year survival outcomes among the best in the world.<sup>12</sup> These excellent outcomes stem in part from well-funded public health systems. In Australia, most cancer medications are highly subsidised by the Pharmaceutical Benefits Scheme, and surgery and radiation are available through public hospitals, funded through the Medicare Benefits Schedule with no direct cost to patients. A well-resourced private health system also exists in parallel and improves access to care. In New Zealand, the government agency PHARMAC funds cancer medication for patients treated in the public health system. Surgery and radiation therapy are provided at no direct cost to patients through government-funded District Health Boards.

In contrast, the absence of publicly funded cancer care in many LMICs poses a significant barrier for patients in accessing care. Nonetheless, we propose that ANZ strive to improve cancer services in the APAC region through the following ANZ Regional Oncology Collaboration Strategy:

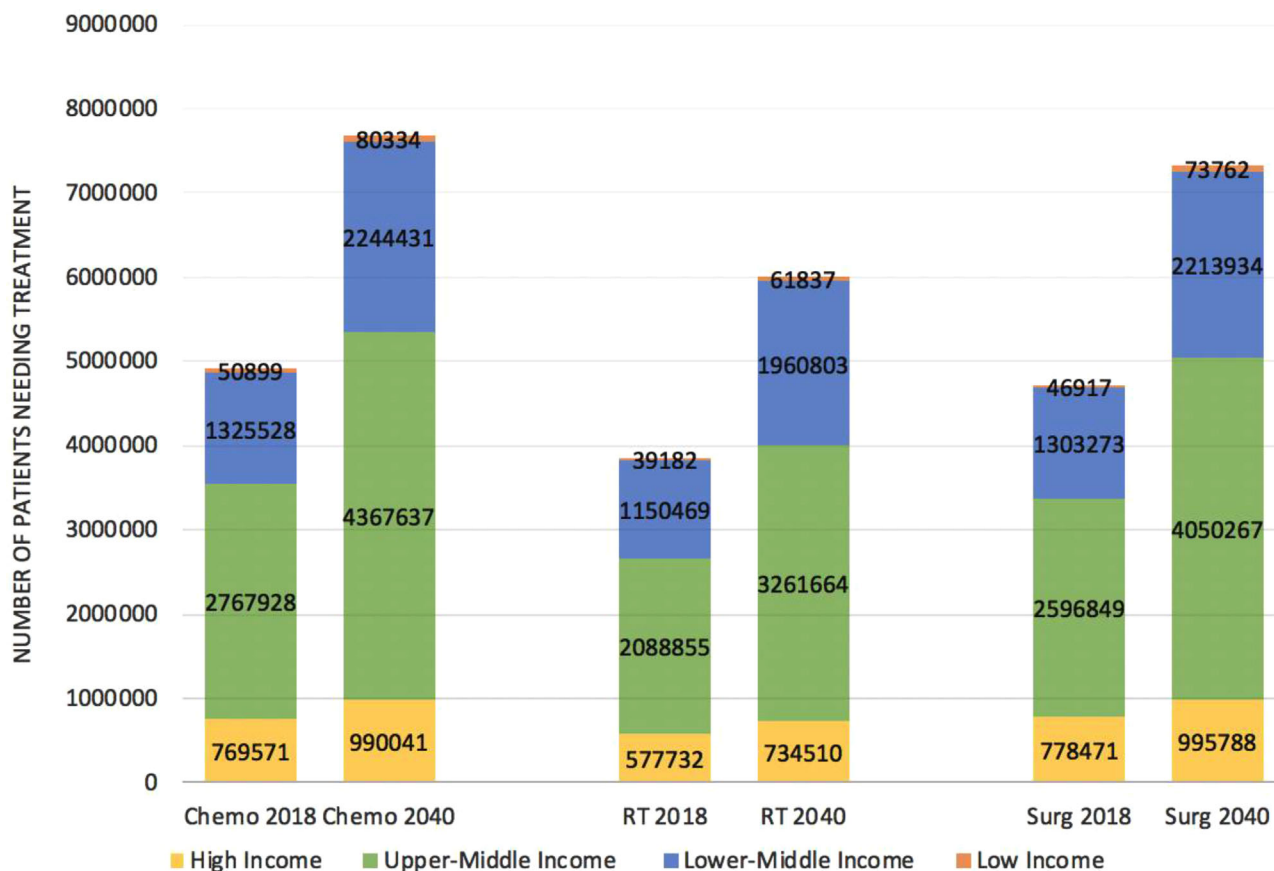
1. Education and institutional partnerships to develop capacity in cancer care.
2. Supporting population-based cancer registries.
3. Capacity building in cancer research.
4. Engaging and training ANZ clinicians in global oncology.
5. Web-based endeavours.
6. Funding.

**TABLE 1** Chemotherapy, radiotherapy and surgical demands by country in the APAC region between 2018 and 2040

Country	Income level*	Cancer incidence 2018	Cancer incidence 2040	Chemotherapy demand 2018	Chemotherapy demand 2040	Radiotherapy demand 2018	Radiotherapy demand 2040	Surgical demand 2018	Surgical demand 2040
China	UM	4263562	6639511	2639218	4160776	1988358	3101522	2472866	3850916
Japan	H	875035	986446	522576	591845	385524	428224	507520	572139
DPR Korea	L	55193	82071	34979	52399	26372	39042	32012	47601
Republic of Korea	H	274401	420684	148177	237519	102060	163816	159153	243997
Mongolia	LM	5552	11562	3343	6975	1664	3414	3220	6706
Brunei Darussalam	H	895	2104	551	1287	451	1055	519	1220
Cambodia	LM	15146	29991	8978	17739	6377	12522	8485	17395
Indonesia	LM	342639	564662	203152	330994	176043	287230	198731	327504
Laos	LM	7611	14996	4676	9217	3305	6546	4414	8698
Malaysia	UM	43372	83063	26367	49920	22430	42317	25156	48177
Myanmar	LM	67884	106177	41844	65596	33424	52054	39373	61583
Philippines	LM	140168	252755	81283	145703	67462	122028	81297	146598
Singapore	H	25770	56109	14218	30820	12429	25949	14947	32543
Thailand	UM	168122	257078	101123	155020	76938	116051	97511	149105
Timor-Leste	LM	658	1115	406	684	336	575	382	647
Vietnam	LM	163573	283331	100302	175832	72397	127531	94872	164332
Bangladesh	LM	149741	288023	90516	173868	80065	155294	86850	167053
Bhutan	LM	581	1254	375	810	260	557	337	727
India	LM	1146672	1891638	670707	1102832	600551	996563	665070	1097150
Maldives	UM	418	999	246	580	213	502	242	579
Nepal	L	25699	45106	15920	27934	12810	22795	14905	26161
Pakistan	LM	171152	314543	99721	182487	90894	168451	99268	182435
Sri Lanka	LM	23283	32793	13433	18959	11629	16537	13504	19020
Australia	H	138598	209980	70247	107521	64308	96198	80387	121788
New Zealand	H	25156	37599	12541	18893	11754	17177	14590	21807
Fiji	UM	1509	2040	790	1054	737	989	875	1183
Papua New Guinea	LM	11173	21207	5871	11087	5222	9974	6480	12300
New Caledonia	H	1187	1981	626	1042	597	1001	688	1149
Solomon Islands	LM	502	977	265	509	236	462	291	567
Vanuatu	LM	223	421	112	206	99	187	129	244
Micronesia	LM	983	1681	541	932	504	877	570	975
Guam	H	387	656	214	363	200	347	224	380
French Polynesia	H	813	1466	421	752	410	741	443	765
Samoa	UM	343	530	184	287	179	283	199	307
<b>Total</b>		<b>8148001</b>	<b>12644549</b>	<b>4913925</b>	<b>7682443</b>	<b>3856238</b>	<b>6018813</b>	<b>4725510</b>	<b>7333751</b>

\*Income level based on World Bank Development Classification for 2018: Low income (L) annual gross national income (GNI) < US\$995; Lower-middle income (LM) annual GNI of \$995-3895 per person; Upper-middle income (UM) - annual GNI of \$3896-12055 per person; High income (H) annual GNI > \$12055 per person.

List of countries excluded from GLOBOCAN 2018 projections that form part of APAC: Taiwan, Kiribati, Tonga, American Samoa, Northern Mariana Islands, Marshall Islands, Palau, Cook Islands, Wallis and Futuna, Tuvalu, Nauru, Niue, and Tokelau.



**FIGURE 1** Growth in chemotherapy, radiotherapy and surgery demand between 2018 and 2040 in the APAC region by income Group [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

Current endeavours and areas for expansion are illustrated in Table 2.

#### 4.1 | Education and institutional partnerships to develop capacity in cancer care

Capacity building through education and institutional partnerships may be the most pragmatic way ANZ can promote regional cancer care. ANZ have centrally regulated college-based training programs for medical oncologists, radiation oncologists, surgeons, palliative care physicians, radiation therapists and medical physicists, leading to qualifications with sound international reputations. In contrast, many small island nations such as the Solomon Islands have no trained oncologists, let alone formalised training programs. Even in China, which is projected to need 27% of the global cancer physician workforce by 2040 to meet chemotherapy needs,<sup>9</sup> there are no centrally regulated training programs to ensure minimum standards of competency.

By partnering with LMICs in our region, ANZ cancer professionals can help educate and train oncology professionals to expand their cancer services and improve the quality of care in the hope that they can train the next generations in their home countries. This 'train the trainer' model of capacity building has improved outcomes for LMICs

in other fields of medicine<sup>13</sup> and would provide long-term educational sustainability for the region.

Training and education can occur both 'in country', where ANZ professionals are based in LMICs to train local staff, or through training and observership posts for LMIC professionals within Australasia. The Asia-Pacific Radiation Oncology Special Interest Group (APROSIG) of the Royal Australian and New Zealand College of Radiologists and the Asia-Pacific Special Interest Group (APSIG) of the Australasian College of Physical Scientists and Engineers in Medicine have predominantly adopted in-country training. Such programs have been established in Cambodia, Vietnam and Mongolia. In-country palliative care courses have been run in Fiji, Cook Islands, Kiribati, Samoa, Tonga and Vanuatu by New Zealand palliative care specialists, often in conjunction with Essential Pain Management workshops run by the Faculty of Pain Medicine of the ANZ College of Anaesthetists.<sup>14</sup> In-country training partnerships for medical oncologists and nursing staff also exist in the Solomon Islands, Vietnam and West Timor. The Pacific Islands Program of the Royal Australasian College of Surgeons (RACS) has also developed training partnerships, with teams comprising surgeons, anaesthetists and nurses providing in-country training in the Pacific.<sup>15</sup> In-country training programs allow local professionals to be trained within their local health system, treating their own patients and using their own equipment. Each country and institution will have different

**TABLE 2** Potential areas for increased collaboration between ANZ and LMICs in the APAC region

Objective	Intervention	Current examples	Proposals for Expansion
Education and institutional partnerships to increase capacity and quality of service delivery	In-country training	Ongoing partnerships in Solomon Islands, Mongolia, Cambodia, Vietnam, West Timor	Expansion to include medical oncology, radiation oncology, medical physicists and nursing at all sites
	Twinning programs	Cho Ray Hospital, Ho Chi Minh, Vietnam and North Coast Cancer Institute, NSW, Australia Johannes Hospital in Kupang, West Timor and Flinders Medical Center, South Australia	Increase number of active twinning partnerships
	Australasian-based observerships	Currently ad-hoc. Prior observerships include: 1. A radiation oncology physicist from PNG trained in Wollongong in 2020 2. Two medical oncologists from China who participated in a 3-month observership at Kinghorn Cancer Centre in NSW in 2019 3. Solomon Islands oncology trainee and oncology nurses participated in observerships at The Canberra Hospital in 2017 and 2019. 4. Clinical training of a Fijian physician in medical oncology at Christchurch Hospital	Centralised database of available observerships
	Formalised training programs	Web-based Master of Cancer Science, University of Melbourne	Engage with professional societies regarding training programs (potentially modified) for LMIC professionals
Promoting data collection through Registries	Increased collaboration with IARC and their regional hubs in the Asia-Pacific		Include expertise in cancer registry development when developing education and training programs with LMICs, in close collaboration with IARC
	Australian based training	Training Cambodian cancer registrar through placement at NSW Cancer Institute	
Building capacity for cancer research	Increasing research capacity in LMICs	ACORD Workshop IAEA's Regional Cooperative Agreement for Research, Development and Training	Promote training partnerships and collaboration between universities and research institutions in ANZ and regional LMICs
	Promoting high quality global health research within Australia		Increase university and institution incentives for global health research
Engaging and training Australian oncology clinicians in global oncology	Formally incorporate global oncology into training programs	Incorporation of Global Oncology into FRANZCR curriculum	Engage RACP, RACS and RACR
	Engaging with politicians and developing health policy programs		Increasing engagement with health policy makers and politicians to develop regional cancer control plans
Web-based endeavours	Web-based advocacy platforms	GlobalRT	Expanded advocacy platforms for medical and surgical oncology
	Virtual tumour boards	IAEA APAC virtual tumour board -upcoming	Expansion of virtual tumour boards to include medical and surgical oncology

(Continues)

TABLE 2 (Continued)

Objective	Intervention	Current examples	Proposals for Expansion
	Web-based teaching	IAEA Applied sciences of oncology course	Development of web-based course on global oncology
Funding	Government-based funding	DFAT Grants	Ongoing advocacy for funding through government
	Professional association or college based funding	RANZCR International Development Fund Grant	Advocate for funding opportunities through RACP and RACS, COSA and MOGA
	Hospital-based funding		Sponsoring observerships
	Fundraising	Better Healthcare Technology Foundation	Philanthropy especially with expatriate community
	Not-for-profit funding	Flinders Overseas Health Group John James Foundation	Explore funding opportunities through additional not-for profit agencies Funding for Master of Cancer Sciences for oncology registrar from Solomon Islands
	Industry		Encourage design and conduct of trials with a focus on questions relevant to LMICs

Abbreviations: ANZ, Australia and New Zealand; APAC, Asia-Pacific Countries; COSA, Clinical Oncology Society of Australia; DFAT, Department of Foreign Affairs and Trade, Australia; LMIC, low- and middle-income countries; MOGA, Medical Oncology Group of Australia.

resource constraints, cultural needs, drug availability and educational requirements, necessitating that training be flexible and adapted to the local environment. This requires close collaboration between the training institution, Ministry of Health, local non-governmental organisations and visiting professionals so that the delivered training is relevant and practical. As such, we encourage in-country training to support development of local clinical protocols based on best available resources and evidence. Initiatives should also work towards the outcome of a self-sustaining workforce through the development of local training programs in partnership with educational institutions. ANZ oncology professionals and academics can contribute knowledge in education and curriculum design with the ultimate aim for training programs to be locally run and specific for the clinical context, resources, culture and language of the LMIC trainees. As an example, an Australian radiation therapist trainer provided support in the development of the first Vietnamese radiation therapy training program with Ho Chi Minh City University of Medicine and Pharmacy.<sup>16</sup>

Conversely, ANZ-based training, observerships and fellowships offer professionals from LMICs the opportunity to learn about ANZ cancer systems and models of care. This knowledge can then be brought back and shared at their home institutions. We are aware of several such observerships that have occurred (Table 2), however, they remain ad hoc. LMIC professionals who are eligible for medical registration can also acquire transferable knowledge and skills

by working in ANZ hospitals. For example, a Fijian specialist general physician received medical oncology training at Christchurch Hospital, whilst being formally employed as registrar. As an extension of the RACS Pacific Islands Program, surgeons from Pacific Island nations have also been trained within ANZ hospitals while employed as registrars, gaining skills in colorectal, gynaecological oncologic, urologic, orthopaedic, head and neck and paediatric surgery. Observerships and training within ANZ have associated challenges including language barriers, cultural barriers, costs, the challenges of relocation for the candidates, potential quarantine periods, visa requirements, TB exclusion and the possibility of leaving the candidates' usual place of work unsupported. To our knowledge, there is no formal repository of placements available to professionals from LMICs, but a centralised database of ANZ-based organisations and individuals willing to host participants would likely increase participation.

International twinning partnerships between institutions in ANZ and surrounding LMICs have the potential to build more lasting partnerships. Twinning partnerships have been recognised as an effective means for training and knowledge transfer in paediatric oncology<sup>17</sup> and have shown a direct benefit on patient survival. Hospitals in New Zealand have longstanding twinning arrangements in paediatric oncology with Fiji (Christchurch Hospital), Cook Islands, Niue, Samoa, Tokelau, Tonga and Vanuatu (Starship Hospital, Auckland).<sup>18</sup> These have facilitated development of resource-appropriate treatment protocols,

training exchanges for nurses and regular teleconferences to discuss individual cases. Examples of partnerships between Australian adult oncology services and LMICs include the departments of radiation oncology at Cho Ray Hospital in Ho Chi Minh, Vietnam and the North Coast Cancer Institute in NSW, and the partnership between Flinders Medical Center in South Australia and Johannes Hospital in Kupang, West Timor.

Our professional societies could also play a greater role within the APAC. Precedent exists within the Royal College of Physicians, where doctors from LMICs receive formal oncology training in the United Kingdom. More formalised programs where qualifications can be obtained by LMIC professionals should be considered. On the other hand, if such qualifications are transferrable, they increase the risk of professionals in LMICs relocating permanently to high-income countries based on the qualifications obtained. An alternative is the web-based Masters of Cancer Sciences, currently available through University of Melbourne,<sup>19</sup> or other similar degrees; however, these courses are costly. ANZ-based training institutions could also provide guidance and support for LMICs as they plan and develop their own oncology training programs.

RANZCR have formalised a commitment to global oncology in LMICs through the APROSIG initiative, and the RACS has incorporated LMIC cancer care in its current Global Health Strategic Plan.<sup>20</sup> To date, no such interest group has been established for medical oncology. A more coordinated approach would have the benefits of allowing collaboration and cross-project learning, as well as long-term sustainability and multi-disciplinary investment.

## 4.2 | Supporting better data collection through registries

The backbone of effective cancer control for any country is an accurate understanding of the burden of malignancy through registries which provide systematic collection of cancer incidence and outcomes. When successfully implemented in LMIC settings, registries can have significant benefits on cancer outcomes.<sup>21</sup>

The lack of registries in LMICs is predominantly due to a shortage of human and financial resources, rather than a lack of recognition of the importance of registries, as previously described.<sup>22</sup> Furthermore, the lack of awareness of cancer as a potential diagnosis, and limited diagnostic capabilities may lead to underestimation of incidence. ANZ cancer registries are well established, and expertise could be shared with LMICs as they develop their own registries. For small island nations, shared databases with centralised management to capitalise on economies of scale could offer an attractive advantage.

The WHO and International Agency of Cancer Registries (IARC) have developed the Global Initiative for Cancer Registry Development and have established partnerships throughout the world, including the APAC.<sup>23,24</sup> The South, East and South-Eastern Asia Hub is based at Tata Memorial Hospital in India and provides regional support to countries within the APAC. The Pacific Islands Hub managed out of France

covers Melanesia, Micronesia and Polynesia. The IACR offers software, site visits and training for countries developing and maintaining population-based cancer registries. By partnering with IARC, ANZ-based institutions with expertise in cancer registries could support and promote registries within the APAC. ANZ institutions can assist in training cancer registrars from LMICs in the skills needed to establish and maintain a cancer registry. As an example, a cancer registrar from Cambodia spent 1 month receiving training at Cancer Institute NSW in 2018, funded by the Department of Foreign Affairs and Trade (DFAT) Australia Awards program.

## 4.3 | Capacity building in cancer research

In parallel to investment in education and training, a similar focus on promoting high quality research particularly in clinical trials in LMICs in the APAC region is necessary to improve cancer outcomes. Historically, the majority of cancer research has been conducted in high-income countries, with patient characteristics and outcomes specific to these regions and resource settings. These results are then generalised to low-income settings without adjusting for different competing risks, patient genetics and other factors that might drive outcomes and treatment response. However, many aspects of cancer care in LMICs are unique and require local research and solutions.

The Asia-Pacific Clinical Oncology Research Development (ACORD) initiative<sup>25</sup> promotes international collaboration for clinical trial development and research within the APAC region, with a particular focus on promoting research in LMICs. The cost for participants from LMICs is fully subsidised, and participants are encouraged to develop projects relevant to their home institutions. The International Atomic Energy Agency's (IAEA) Regional Cooperative Agreement for Research, Development and Training has also sponsored a number of clinical trials and training programs in LMICs within the APAC. Research partnerships promoting epidemiological research also exist between Australia and Solomon Islands,<sup>26</sup> and New Zealand Universities and Fiji National University.

There are numerous examples of partnerships in other regions, providing a proof of concept for feasibility and the benefits of expanding such arrangements. For example, the African Research Group for Oncology linked academic institutions in Nigeria, the US and UK to promote and develop cancer research in Africa.<sup>27</sup> Similar partnerships with ANZ institutions and universities would have the benefits of increasing collaborations and building capacity in the cancer research sector within our region. Developing partnerships in biomedical research such as biobanking and genomics would allow for greater diversity in trial populations, increase our understanding of the genetic and genomic similarities and differences across our region, and help equip local researchers in LMICs to gain the skills required to develop and promote their own research agendas.

Australasian oncology researchers can also contribute to the expansion of oncology services in our region by focusing on high level global health research that has the capacity to influence policy makers and stakeholders within LMICs and the APAC.<sup>9,11,28-30</sup>

#### 4.4 | Engaging and training ANZ clinicians in global oncology

Global oncology is increasingly recognised as a career path with many opportunities and challenges.<sup>31</sup> ASCO has created the Academic Global Oncology Leadership Task Force to help formalise global oncology as a career path, and support research activities.<sup>6</sup> Similarly, there has been increasing interest in developing a global health career pathway in radiation oncology.<sup>32,33</sup> International initiatives to promote global health endeavours during radiation oncology training include the American Society for Therapeutic Radiation Oncology/American Residents in Radiation Oncology and the Canadian Association of Radiation Oncology trainee global health scholarships. Australasian oncology networks should make a similar commitment to incorporating global oncology into training programs for medical, surgical and radiation oncology. Web-based platforms providing the core knowledge and skills could be developed, modelled on prior successful training platforms such as IAEA Applied Science of Oncology course.<sup>34</sup>

Engagement from both junior and senior clinicians in ANZ is important to ensure long term sustainability in global oncology endeavours. Junior and senior clinicians have different skill sets to offer. Junior clinicians often have more time to contribute and, having just completed training, are in a unique position to advise and support LMICs as they develop their own educational agendas. They may also benefit from the opportunity to develop leadership skills. In contrast, senior clinicians offer a wealth of knowledge and experience, especially with treatments that may be now superseded in high income countries but still appropriate in resource constrained settings. They may also be interested in exploring new opportunities as they near retirement.<sup>35</sup> Each has the potential to play important roles in supporting and promoting oncology care in LMICs.

Having ANZ oncology professionals engaged in global oncology would also present a greater opportunity for interested individuals to engage with politicians and health policy advisors and provide greater leadership in helping to develop National Cancer Control Plans<sup>29</sup> and regional cancer plans. A number of ANZ individuals have been involved in such activities to date, including advising on cancer services planning in Fiji and Papua New Guinea and assessing radiotherapy services through IAEA missions.

#### 4.5 | Web-based endeavours

Not all high-income country oncology professionals have the time or resources to spend time in-country in LMICs. There are still ways interested professionals can contribute. Web-based teaching is one such opportunity. The IAEA web-based Science of Oncology Course<sup>34</sup> is an example upon which further web-based educational resources could be based. The IAEA is also commencing an APAC virtual tumour board project in 2020-2021 using the AFRONET platform. This will allow LMIC radiation oncology professionals to discuss challenging cases with colleagues throughout the region. While currently restricted to radiation oncology, a parallel virtual tumour board for medical

and surgical oncology using similar web-based technologies has obvious advantages. Regular tumour board-style teleconferences between New Zealand paediatric oncology departments and paediatricians in countries such as Fiji are already well established. Virtual multidisciplinary team meetings have been used in Rwanda through Partners-in-Health with twinning agencies in the United States with success,<sup>36</sup> and serve as an example of what can be achieved through web-based and virtual technologies to improve access and quality of cancer care. With the recent completion of the Coral Sea Cable System funded by Australian Aid bringing high speed internet to Papua New Guinea and Solomon Islands, virtual tumour boards promoting cross-country collaboration and teaching are increasingly possible.

Web-based technologies and platforms can also serve as an advocacy tool. One such example is the globalRT.org project, an online platform which advocates for the need to increase access to radiotherapy in LMICs globally.<sup>37</sup> The merits of parallel web-based platforms for medical and surgical oncology could be considered.

#### 4.6 | Funding

Funding of global oncology activities is an obvious challenge which can limit the amount of assistance ANZ can provide. A number of funding sources are currently leveraged and should continue to be expanded on to build capacity.

Recent examples of Australian government aid which have supported APROSIG and APSIG endeavours include: the Australian Volunteer International program scholarships which have funded a number of Australian medical physicist and radiation therapist in-country placements; DFAT, which has funded training in Australia for Cambodian cancer professionals, and capacity building projects in the Solomon Islands and Pacific Islands in partnership with the RACP/RACS.

Professional bodies can also play a role in funding. The RANZCR awards an annual International Development Fund grant to radiation oncology projects in LMICs focused on capacity building. We encourage other professional bodies such as RACP, RCPA, RACS and COSA to consider funding similar grants focused on capacity building throughout the region.

Fund-raising is another potential avenue, with the APSIG group funding the majority of its volunteer placements through donations to its Better Healthcare Technology Foundation. Oncology departments can also provide support through donation of equipment, in-kind provision of staff members' time and funding support. A not-for-profit organisation The Flinders Overseas Health Group has previously funded work in West Timor, and the John James Foundation recently funded a registrar in the Solomon Islands to undertake speciality training in oncology through the Masters of Cancer Sciences through the University of Melbourne. Additional not-for-profit funding agencies through which support could be sought include Cancer Councils, Rotary, religious organisations and philanthropic funds such as Mindaroo and the Gates Foundation. Finally, partnerships with Industry could also be leveraged, particularly to improve access to medications,



equipment and clinical trials, and to help design studies answering questions relevant for LMICs.

## 5 | PRINCIPAL BARRIERS TO IMPLEMENTING ANZ REGIONAL ONCOLOGY COLLABORATION STRATEGY

There are common barriers that ANZ will face when implementing the above strategy to increase engagement in global oncology. These include: ensuring endeavours are appropriate for the given resource level; ensuring educational programs are culturally appropriate; securing funding for training, research, web-endeavours and registries; engaging interested ANZ professionals, professional societies and universities; and matching the available skills from professionals in ANZ with the needs of institutions in LMICs. Other less predictable barriers can include natural disasters, political instability and war. The current pandemic has limited on the ground training endeavours but has provided the impetus to develop novel web-based teaching platforms. A systematic approach to tackling these barriers should be through the formation of a formal APAC working group of ANZ oncology professionals, which can then allow for wider collaboration with local, regional and international stakeholders.

## 6 | CONCLUSION

To our knowledge, this paper is the first attempt to summarise ANZ's potential role in cancer promotion within the APAC region. We propose the creation of an APAC interest group within COSA to provide formalised and sustained collaboration between researchers, clinicians and stakeholders. We hope other high-income countries within the APAC will make similar commitments to regional collaboration. The ANZ Regional Oncology Collaboration Strategy will focus on:

1. Increasing education and institutional collaborations in the APAC region through in-country training, twinning partnerships, observerships and promoting formalised training programs in order to increase cancer care quality and capacity.
2. Supporting the establishment and maintenance of population-based cancer registries in LMICs within the APAC region.
3. Increasing research capacity in LMICs through collaboration, and promoting high quality global oncology research within ANZ.
4. Engaging and training ANZ clinicians in global oncology, increasing awareness of this important career path, and increasing political and health policy engagement.
5. Increasing web-based endeavours through virtual tumour boards, web-based advocacy platforms and web-based teaching programs.
6. Continuing to leverage funding through professional bodies, government, industry, not-for-profit organisations and local hospital funds.

Any cross-country agendas between ANZ and LMICs should be developed in collaboration with partnering countries and institutions

to ensure that programs meet the needs of these countries. We encourage interested parties to engage in this process and help drive the agenda.

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### ETHICS APPROVAL STATEMENT

All results are based on publicly available data, no ethics approval was required.

### CONFLICT OF INTEREST

The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

### DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analysed in this study.

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