

The Ohio State University
College of Pharmacy

Australia and New Zealand

Exploring Healthcare and Pharmacy by Representative Countries

Peshan Ngo

Pharmacy 6193: Global Pharmacy Independent Study

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Introduction

Australia refers to an entire continent as well as a single country. Because of its dual identity, Australia has the largest mainland island size, which exceeds 7.69 million kilometers squared.¹ Australia also claims third place in terms of amount of ocean territory, which is about 12 million kilometers squared.¹ Not surprisingly, eighty percent of the people in Australia live within 100 kilometers of the coastline.¹ In addition, since January 1, 1901, Australia has been under a single government and is ranked sixth in nation-size.¹

In contrast, New Zealand does not belong to any of the commonly known continents, and its location near Australia often leads to it being categorized incorrectly. The correct term for grouping the countries Australia and New Zealand together is Australasia, which may mean just these two nations or may include a few neighboring countries as well. New Zealand is part of Zealandia, a microcontinent, and sits on two tectonic plates: the Pacific and the Australian.² Because of the movement of the Earth's crust, New Zealand has a diverse range of geographic landscapes, which includes geothermal areas or hot springs, sandy beaches, rugged coastlines, mountain ranges, fertile farmland, glaciers, and sunken mountains.² The beauty of this island, thus, makes it an ideal location for filming movies, like the Lord of the Rings series.²

Being a microcontinent, New Zealand's population size is only about a fifth of Australia's.³ According to 2013 statistics, New Zealand is home to 4,470,800 people compared to Australia's population of 23,130,900.³ A mixture of Māori, European, Pacific Island and Asian people inhabit New Zealand,² whereas Australia has aboriginals, Torres Strait Islanders, and mostly immigrants.¹ Immigrants and their descendants have been populating Australia for the past two centuries, and they come from over 200 countries.¹ Exemplifying the developmental status of these two countries, about 83% of both populations use the internet.³ The most common language is also English,¹ which is indicative of their governments.^{1,4}

Currently, Australia and New Zealand have Queen Elizabeth II as their Head of State.^{1,4} They both have constitutional monarchies under United Kingdom and their governments are based on liberal democratic traditions of religious tolerance and of speech freedom.^{1,4} New Zealand has a "separation of powers" policy; three independent branches of government exist to prevent one part of the government from having too much power.⁴ Australia is separated into three levels of government.¹ With the most power, the federal Australian government oversees the entire nation.¹ The next level consists of the governments of the six states and two territories.¹ The last level is regional, and Australia has about 700 local government authorities.¹ These two nations may have the same monarch, but they also have their own unique rules and regulations.

The management of each country's healthcare with a focus on the practice of pharmacy further exemplifies the similarities and differences between Australia and New Zealand.

Healthcare

Overall, Australia and New Zealand face the major causes of deaths expected from developed countries. These chronic conditions include ischemic heart disease, cerebrovascular disease, diabetes mellitus, and cancer of the trachea, bronchus, and lung.^{5,6} They also have a similar life expectancy,³ which serves as a marker of their healthcare. Australia has about one year more at 82.1 years for an average citizen's lifespan versus New Zealand's 81.2 years.³ New Zealand's government, however, spends a higher percentage of their gross domestic product, GDP, on health, and has a higher public health expenditure.³ Contributing to these additional costs may be their public health system, which is free or low cost with heavy government

subsidies, and their accidental injury policy, which grants free treatment for any accident.⁷ Even if the person caused the accident, which may or may not be vehicle-related, he or she will receive free, full healthcare treatment.⁷ In addition, a small population of New Zealand may choose to get private, additional coverage as well.⁷ For non-residents, they can purchase healthcare services at a cost or have medical insurance from their home country.⁷ Insurance in Australia differs slightly, and citizens have access to private, public, and Medicare plans.⁸

As healthcare professionals, pharmacists also influence the system with their care for the well-being of patients and of the community.

Pharmacy

History

Australasia helped change the pharmacy profession. Australia has major contributors to the world of pharmacy. Jeromius Cornelisz was an apothecary and the first medical person on Australian soil.⁹ John White, a Surgeon General, arrived in January 1788.⁹ He observed aboriginals making Tincture of Kino, a concoction used for dysentery, or bloody diarrhea; the native people collected the dark gum from the Red Gum tree, *Eucalyptus resinifera*, and then dried and dissolved it in Spirit of Wine.⁹ White distilled *Eucalyptus piperita* or Sydney Peppermint, and pharmacist Joseph Bosisto later extracted it to be used commercially in 1852.⁹ Afterwards, Australia led the world market for eucalyptus for eight decades, winning prizes at seventeen international exhibitions.⁹ Another prominent figure was John Tawell. When he was in England, he was a traveling salesman with a patent medicine company but then was transported to Australia for forgery.⁹ In 1820, he opened Sydney's first chemist shop as a certificated apothecary able to compound and dispense medicines.⁹ Later in 1845, he retired and returned to England, where his life ended when he was hung for murdering his mistress using poison.⁹ Another entrepreneur, Michael Bates was the first pharmacist to open a pharmacy, and the grand opening occurred in 1825 in Tasmania.⁹ That pharmacy currently trades as Hatton and Laws Pharmacy.⁹

The pharmacy-related historical value of New Zealand is based on events. For example, the University of Otago had the first four-year pharmacy degree program not only in Australasia but also in the United Kingdom.¹⁰ That curriculum shift started in the early 1960s.¹⁰ Besides from the United States, New Zealand is also one of the only countries that allow Direct-to-Consumer Advertising, DTCA, of prescription medicines, which is the marketing of branded prescription-only medications or treatments to patients.¹¹ This practice is regulated under the Medicines Act 1981 and Medicines Regulations 1984.¹¹ Another related form of advertising, disease-state advertising, aims to raise awareness of specific diseases and the treatments available without identifying a specific therapeutic product.¹¹

Education

Currently, to become a licensed pharmacist in either Australia or in New Zealand, a student must receive at least a baccalaureate.^{10, 12-16} Australia has twenty-one board-certified pharmacy schools.¹⁵ Fourteen schools only offer a bachelor's degree, and their names are Charles Darwin University, Charles Sturt University, James Cook University, La Trobe University, Monash University, Queensland University of Technology, RMIT University, University of Auckland, University of Canberra, University of New England, University of Otago, University of Queensland, University of South Australia, and University of Tasmania.¹⁵ The University of Western Australia and the University of Technology Sydney offer a Master's

program only.¹⁵ A student may choose either a bachelor's or a master's degree program in five schools: Curtin University, Griffith University, University of Canberra, University of Newcastle, and University of Sydney.¹⁵ A pharmacist, therefore, must spend up to six years post high school graduation in pharmacy school.^{13, 15} To be licensed, graduates must pass the registration requirements decided by the Pharmacy Board of Australia and do an internship under a registered pharmacist.^{12, 13} Then, to maintain their ability to practice, they must take periodic courses called continuing professional development (CPD), which is required by Pharmacy Board of Australia.^{13, 15, 17}

In contrast, New Zealand only has two pharmacy schools: the University of Auckland and the University of Otago.¹⁴ In their curriculum, they focus on the understanding of drugs and pharmacy, and their experiential experience is in community and hospital pharmacies.¹⁰ The students do have the option of completing their required hours in New Zealand or in international exchange schemes in approved countries.¹⁰ Graduates from pharmacy school are also required to complete an internship of one year working in a hospital or a community pharmacy.^{10, 14} This training is called the Evolve Intern Programme, and they have to complete it within two years after obtaining their baccalaureate, or BPharm.¹⁶ From February to December, they have a preceptor and must work at least 35 hours per week before taking a final assessment.¹⁶ If they wish to complete this internship overseas, they have to work with an approved preceptor abroad for at least 26 weeks and then take the assessment in May or December.¹⁶ That international experience must be completed within two years of acceptance.¹⁶ Finally, after passing the exam, they can become practicing pharmacists after registering with the Pharmacy Council of New Zealand.¹⁴ Similar to the pharmacists in Australia, the pharmacists must have continued education and receive their Annual Practising Certificates, which is their required ongoing training.¹⁴

Practice

After being trained and getting their licenses, pharmacists may care for their patients independently. In terms of the professional role, pharmacists in New Zealand and Australia have similar responsibilities, but pharmacists in Australia have greater opportunities of impacting patient care. Figure 1 below shows a comprehensive list of services pharmacists provide in both countries.

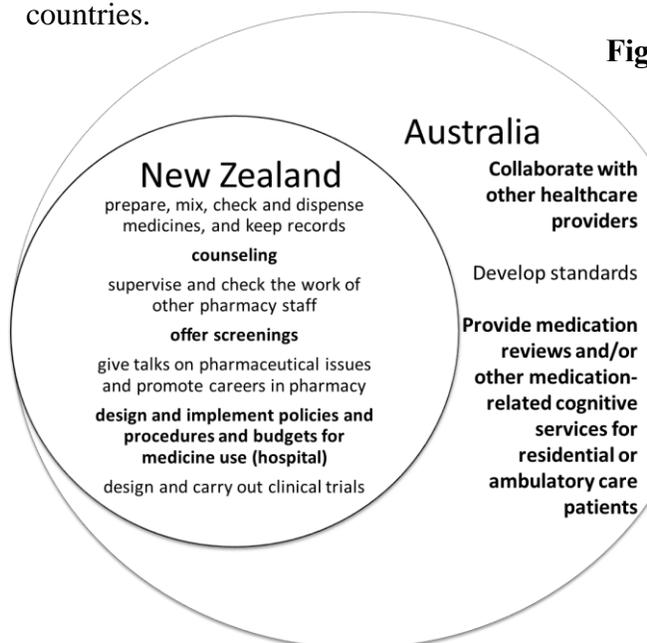
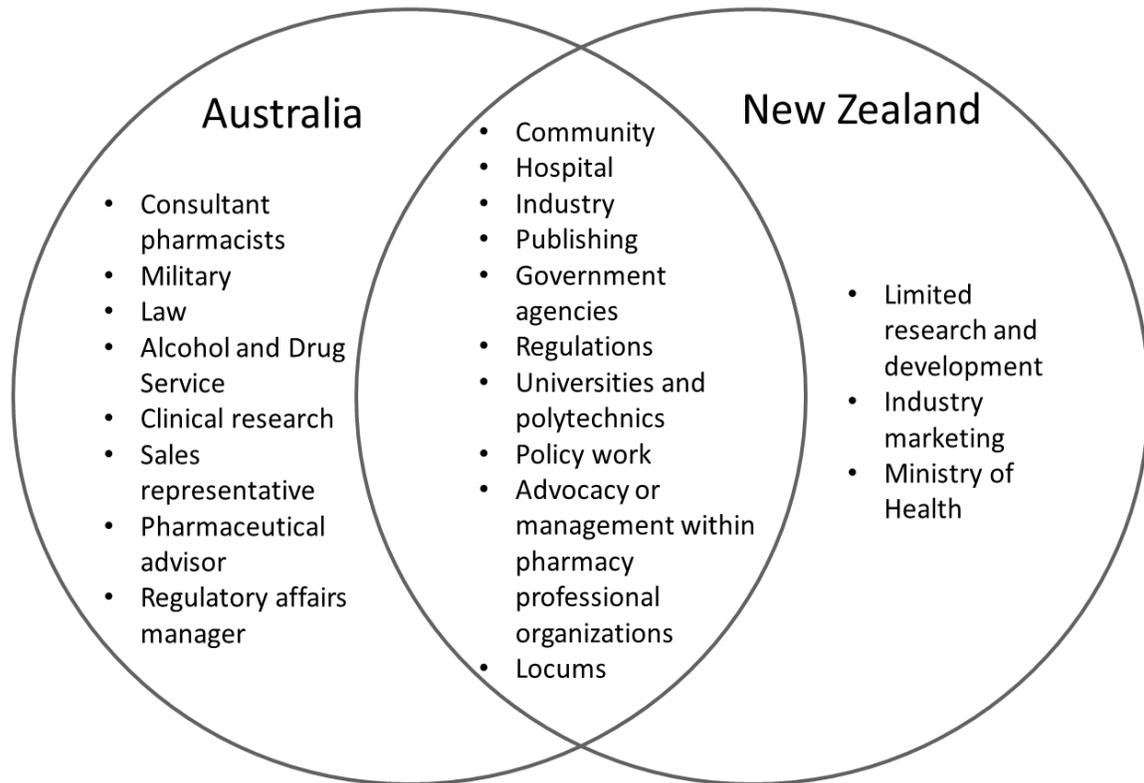


Figure 1. Pharmacists' Roles.^{13, 14}

The figure highlights that pharmacists from Australasia provide counseling to offer information and advice on medicines, health issues, and lifestyle choices as well as cholesterol testing, blood pressure monitoring, and glucose screening.^{13, 14} Pharmacists in Australia, however, also collaborate more with other healthcare providers, develop standards, and provide medication reviews and other medication-related cognitive services for residential or ambulatory care patients.¹³

Australia, therefore, has more options for the pharmacist and that aspect correlates with their career choices. Figure 2 compares the pathways pharmacists have after graduation in each country.

Figure 2. Career Pathways.^{13, 14, 18, 19}



Most of these options are common pharmacy practices, but some pathways require more explanation. The term locums refer to pharmacists who substitute for fulltime pharmacists on vacation or maternity leave temporarily and differ from part-time pharmacists, who work regularly at a particular site.¹⁴ Consultant pharmacists in Australia work in community pharmacies or hospitals and can also be self-employed.¹³ Sales representatives present to pharmacies, wholesalers, hospitals, medical specialists, and general practitioners, while the pharmaceutical advisor works in state health departments.¹⁸ Clinical research includes managing clinical trials and their data; they collect, code, process, validate and analyze patients' information.¹⁸ Lastly, New Zealand has limited research and development because of its island size; the majority of medication production is done overseas.¹⁹ New Zealand, however, do have over 900+ community pharmacies throughout the island.¹⁹ In regards to responsibilities and opportunities, Australia, ergo, is more advanced than New Zealand.

Outlook

The largest disparity between Australia and New Zealand deals with the concept of supply and demand. The Australian pharmacy profession is facing a critical imbalance. A drastic increase in graduates is leading to oversupply concern.¹⁸ The Australian Institute of Health and Welfare predicted a shortage in 2003, and consequently, the number of pharmacy schools almost tripled in ten years.¹⁸ By March 2013, Australia had 27,226 registered pharmacists and nearly

half of these pharmacists are currently younger than or about 35 years old.¹⁸ Contributing to this issue is the high regulation of the pharmacy industry by the Australian government.¹⁸ A threshold exists for the number of community pharmacies.¹⁸ In 1990, the national number of pharmacies reduced from around 5,600 to about 5,000 and has remained at that limit.¹⁸ With 27,226 registered pharmacists and 5,000 community pharmacies, about 5.4 pharmacists compete for a job at each pharmacy, especially with community pharmacy as the popular career pathway for young pharmacists.¹⁸ Another contributing factor is the Skilled Occupations List, which addresses the country's workforce shortages by inviting skilled immigrants.¹⁸ Even in 2012, the pharmacy profession was still listed.¹⁸ Finding employment, thus, can be difficult and challenging. To alleviate the oversupply concern, pharmacists are finding methods to increase the variety of their roles and settings, which is evident in Figures 1 and 2.^{13, 18}

New Zealand, however, does not have this issue. According to the Ministry of Business, Innovation and Employment estimates, the number of pharmacists increased by about seven percent between 2010 and 2012.¹⁴ The demand for pharmacists is still high. In addition, New Zealand's population is aging, meaning increased demand for all healthcare professions. Numerous practicing pharmacists are also approaching retirement age.¹⁴ Obtaining a pharmacy job after graduation seems to be much easier in New Zealand than in Australia.

Having highly developed pharmacists' roles also do not mean that pharmacists are being treated well, and the difficulty in finding jobs correlates with the pay and conditions pharmacists endure. Despite being one of the most trusted professions and having a strong community presence,¹³ pharmacy has the worst monetary compensation when compared to all healthcare professions.²⁰ Actually, in all graduates in the country, the rates of pay for pharmacists are the lowest,²⁰ despite the load of responsibilities.¹³ This discrepancy starts from when a graduate begins his or her first community pharmacist's career.²⁰ According to the Graduate Careers Australia's (GCA) annual Australian Graduate Survey, the pharmacists' starting average annual salary was only \$39,000.²⁰ That amount is less than the Pharmacy Industry Award, which means that a majority of pharmacists are being paid less than the legal rates of pay.²⁰ Even people in skilled trades earn higher salaries.²⁰ For example, a plumber may earn more than double the amount of a pharmacist per year at \$85,000.²⁰ Then, because of the lack of job opportunities, pharmacists are being employed as part-timers and cannot even earn those low annual salaries.²⁰ Pay increases also occur significantly less frequently than other professions.²⁰ Pharmacists only had average base hourly rates increased by 2.3%, while other occupation groups received 3-4% raises.²⁰ Even with the minimal increases, four years passed and 37% of pharmacists still did not have a salary review.²⁰

In addition to the low pay, the conditions that pharmacists face are bad as well. When asked, 63% of pharmacists reported that they work through lunch and 50% of them are not being paid for that time.²⁰ Not enough hours are even available for low pay.²⁰ Currently, in employment categorization, 43% are considered part-timers and 24% are casuals.²⁰ A third of the pharmacists employed do not have a sufficient amount of hours to work.²⁰ In the Fair Work Australia Audit in 2012 in Queensland, the results show that 44% of pharmacies did not compensate their staff properly and confirm the bad conditions and bad pay.²⁰ As a result of this audit, a full national audit into pharmacy will be conducted.²⁰ The purpose is to ensure pharmacies will be paying pharmacists rates as required by the law.²⁰

Not all pharmacy careers in Australia, however, are facing this struggle. Community pharmacy used to be the career-of-choice, but hospital pharmacy is becoming more lucrative.²⁰ Over the years, the hospital pharmacists' role has increased and developed into becoming a vital

team member on the interprofessional team; pharmacists work with fellow practitioners to improve healthcare delivery.²⁰ Hospital pharmacists receive larger increases in rates of pay and have better conditions, which includes more fulltime employment and higher salaries.²⁰ A pharmacist working fulltime in a hospital can receive \$41.76 per hour, which is slightly above six dollars more than a pharmacist in a community setting, and will earn \$10,000 more than a community pharmacist yearly.²⁰

Overall, the conditions in New Zealand are more desirable in comparison. Pharmacists who have been working for one to five years have an annual salary of around \$70,000 to \$80,000.¹⁴ More experienced or senior pharmacy managers earn about \$10,000 more per year.¹⁴ Even interns, who have just graduated and are in the midst of their Evolve Intern Programme, may earn \$35,000 per year.¹⁴ Lastly, the hourly pay rate for locums is usually \$40. Pharmacists in New Zealand, therefore, do not have illegal rates of pay, like in Australia, and face better work conditions with a higher demand for these professionals.¹⁴

Conclusion

Both of these countries, Australia and New Zealand, share numerous similarities with their ties to the United Kingdom and with their location in the world,¹⁻⁷ but they differ drastically in the field of pharmacy.¹³⁻²⁰ Australia may have a robust pharmacy history and had an international eucalyptus market domination,⁹ but New Zealand has a unique Direct-to-Consumer Advertising of prescription medicines¹⁰ and pioneered the first four-year pharmacy degree program in Australasia and the United Kingdom.¹¹ Even though Australian pharmacists have expanding roles and opportunities to seek additional education,^{13, 15, 18} the substantial amount of schools, twenty-one,¹⁵ for the island size is creating a surplus supply.¹⁸ Consequentially, pharmacists are burdened with low salaries and non-ideal conditions.²⁰ New Zealand only has two pharmacy schools and the role of pharmacists is limited,^{14, 19} but the demand for pharmacists is rising, which correlates to relatively high pay rates.¹⁴ Each country's pharmacy profession, therefore, benefits from its own advantages and battles with its own difficulties.

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