# Nephrology in the Oceania–South East Asia region: perspectives and challenges

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he Oceania–South East Asia (OSEA) region, as defined by the International Society of Nephrology (ISN), is made up of South East Asian countries, Australia and New Zealand, and a large group of Pacific Island nations (Figure 1). Nephrology across much of the region has significant challenges, including varying health care and economic structures, cultural and ethnic diversity, contrasting geography and population density, and unique delivery of nephrology care at different stages of development. This article sets the scene for the region and outlines some of the issues involved in advancing nephrology in the region.

#### Demographics

Table 1 highlights the diverse demographics of the region. Encompassing approximately 675 million people across 14 major nations plus the myriad Pacific Islands, the region is made up of diverse economies. Population densities also vary considerably from very high (e.g., Singapore) to sparsely populated rural zones.

Although English is the operative language in the OSEA Regional Board, the heterogeneity of cultures in the region has resulted in a wide variation of languages among the countries, with low levels of English literacy in many. There is also language diversity within countries, with Papua New Guinea being the most striking example with more than 800 official languages and dialects in a country of 8 million people.

Ethnicity also provides great diversity in the region. The underlying body habitus varies from smaller-framed South East Asian peoples (normal body mass index  $18.5-23 \text{ kg/m}^2$ ) through to large-framed, heavily muscled Maori and Polynesian peoples (mean body mass index approximately  $30 \text{ kg/m}^2$ ). Some of these groups now have high levels of obesity and associated metabolic syndrome (Table 2).

The region faces a growing health care problem on several major fronts (Table 2):

- Increasing lifespan with an increasing incidence and prevalence of aging-associated diseases;
- A sharp rise in the prevalence of noncommunicable diseases (e.g., rates of diabetes in adults are approximately 20%– 25% in Pacific Island nations and 9%–17.5% in Malaysia<sup>1</sup>).

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#### Figure 1 | The Oceania-South East Asia Region of the International Society of Nephrology (ISN).

• Smoking remains a prominent public health issue, with rates as high as 70% among adult men in Indonesia.<sup>2</sup>

#### Health care expenditure, infrastructure, and indicators

Table 3 describes indicators of general health care resources, expenditures, and outcomes in the various member countries in OSEA.

#### Burden of kidney diseases

Because the OSEA region is an ISN construct, data specific to the boundaries of this region are lacking. However, global disease burden, as reported by Healthgrove<sup>3</sup> (global-diseaseburden.healthgrove.com) and the recently completed ISN Global Kidney Health Atlas,<sup>4</sup> has provided some information on chronic kidney disease (CKD) and related issues in South East Asia, East Asia, and Oceania (Table 2):

- The annual mortality rate due to CKD has increased from 1990 through to 2015 at an average rate of 3.4% per year.
- Annual years of healthy life lost per 100,000 people from CKD is reported as 386 and has increased by 29.6% from 1990 to 2015. These figures (mortality and life-years lost)

Table 1	Demographics	of countries in t	the ISN OSEA	<b>Regional Board</b>
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Country	Population (millions)	Population density (persons per km <sup>2</sup> )	Population growth (%)	Urbanization level (%)	Per capita GDP, PPP 2015 (Int\$ unit)	Official language	Percentage of English speaking
Oceania							
Australia	24.127	3.1	1.46	89.4	47,769	English	76.8
Fiji	0.899	48.8	0.74	53.7	9016	Fijian, English	Unknown
New Zealand	4.693	17.5	1.09	86.3	36,162	English, Maori	89.8
Papua New Guinea	8.085	17.5	2.16	13.0	3495	Tok Pisin	1–2
South East Asia							
Brunei Darussalam	0.423	79.2	1.43	77.2	79,494	Malay	Unknown
Cambodia	15.762	87.9	1.62	20.7	3498	Khmer	<3.7
Indonesia	261.115	142.5	1.25	53.7	11,155	Bahasa Indonesian	Unknown
Lao PDR	6.758	28.9	1.30	38.6	5370	Lao	Unknown
Malaysia	31.187	93.5	1.78	74.7	26,211	Bahasa Malay	Unknown
Myanmar	52.885	80.2	0.88	34.1	5457	Burmese	Unknown
Philippines	103.320	341.1	1.64	44.4	7282	Tagalog, English	Unknown
Singapore	5.607	7,907.5	1.74	100	86,128	English, Mandarin, Malay, Tamil	29.8
Thailand	68.864	134.4	0.43	50.4	16,180	Thai	<8.0
Timor-Leste	1.269	83.5	2.24	32.8	4718	Tetun Prasa	Unknown
Vietnam	92.701	301.8	1.12	33.6	6037	Vietnamese	Unknown

GDP, gross domestic product; ISN, International Society of Nephrology; OSEA, Oceania–South East Asia; PDR, People's Democratic Republic; PPP, purchasing power parity. Data extracted from The World Bank<sup>7</sup> and the US Central Intelligence Agency.<sup>2</sup>

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