

# A Global Ten-Year Epidemiological Forecast of Renal Cell Carcinoma (2019-2029)

## INTRODUCTION

Renal cell carcinoma (RCC) is the most common type of kidney cancer, accounting for approximately 90% of all malignant tumors of the kidney and renal pelvis. RCC incidence is increasing worldwide, and obesity and smoking are major modifiable risk factors impacting this growth.

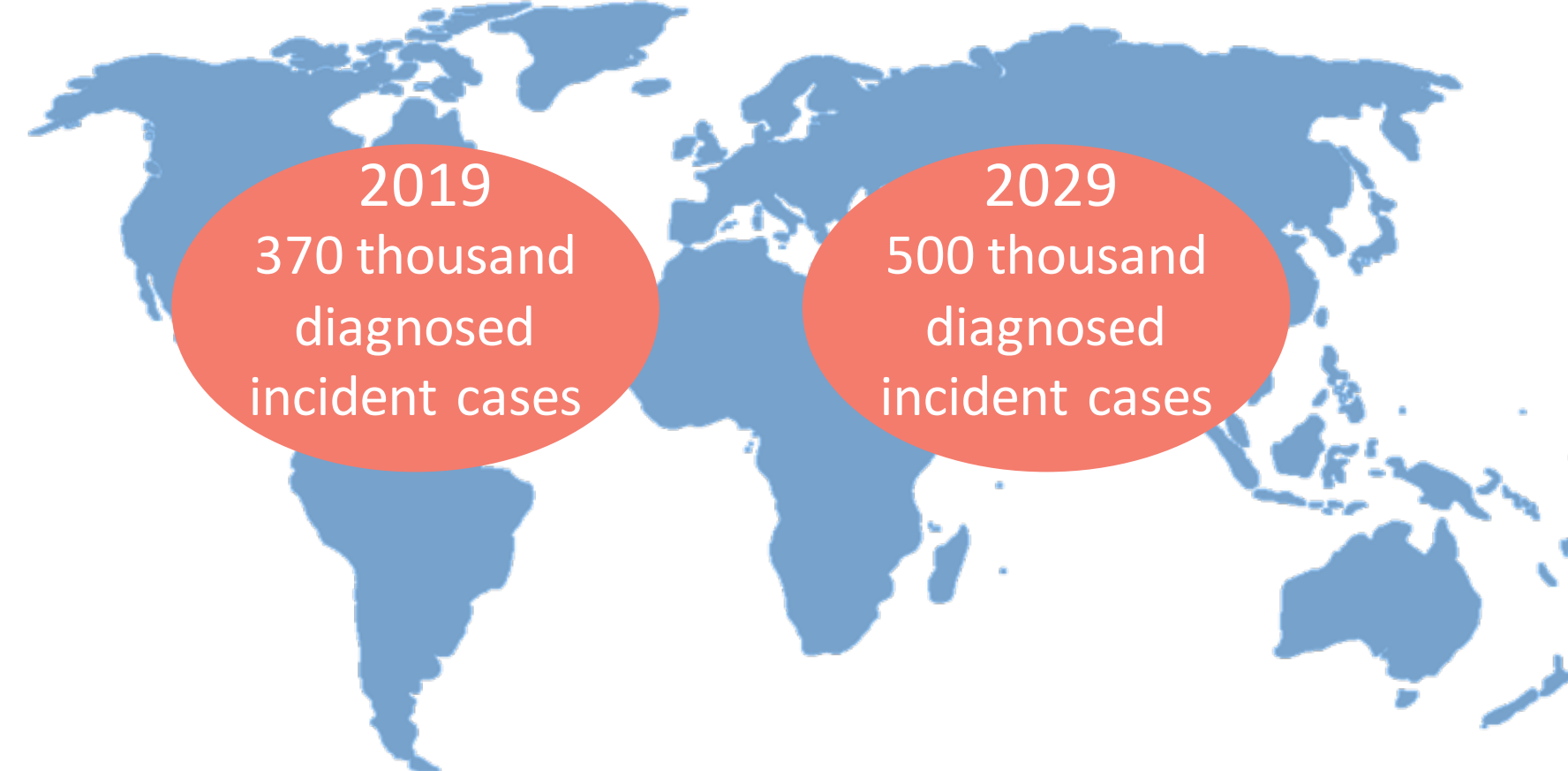
## OBJECTIVES

The aim of this study was to estimate and compare the global diagnosed incidence of RCC by region over the next ten years (2019-2029) using a forecast model that incorporates the changing risk of RCC due to population aging, as well as trends in obesity and smoking prevalence.

## METHODS

We defined RCC using ICD-10 code C64, including the ICD-O-3 histological subtypes 8260, 8310, 8312, 8316-8320, 8510, and 8959. We used critically appraised country-specific cancer registries to estimate RCC incidence for 45 countries grouped into six distinct regions, representing approximately 90% of the world's population.

FIGURE 1: Renal Cell Carcinoma Incident Cases



We reviewed the published epidemiological literature and identified smoking and obesity as the main risk factors for RCC. We incorporated them into our forecast model.

For countries that are considered to be in the process of economic and epidemiological transition towards a developed world economy and disease risk profile, we applied an increasing trend based on the correlation between country-specific GDP per capita and age-standardized incidence.

## RESULTS

In 2019, we estimate the global incidence of renal cell carcinoma to be 370 thousand. We forecast that over the next ten years, this figure will increase by 34% to 495 thousand. The number of diagnosed incident cases of RCC is highest in Europe, accounting for 30% of the global total in 2019.

FIGURE 2 : Incident Cases of RCC in 2019, by region

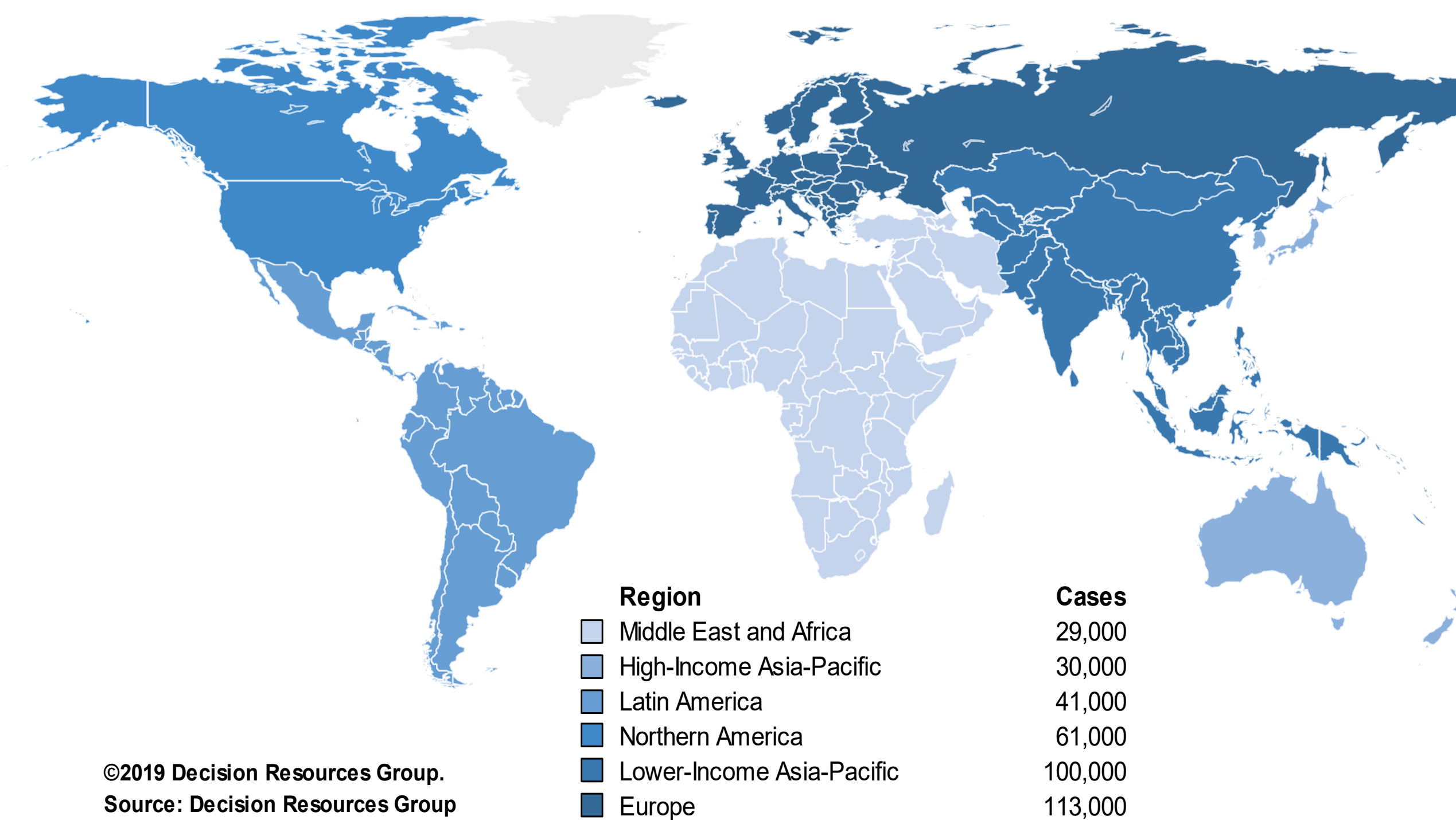
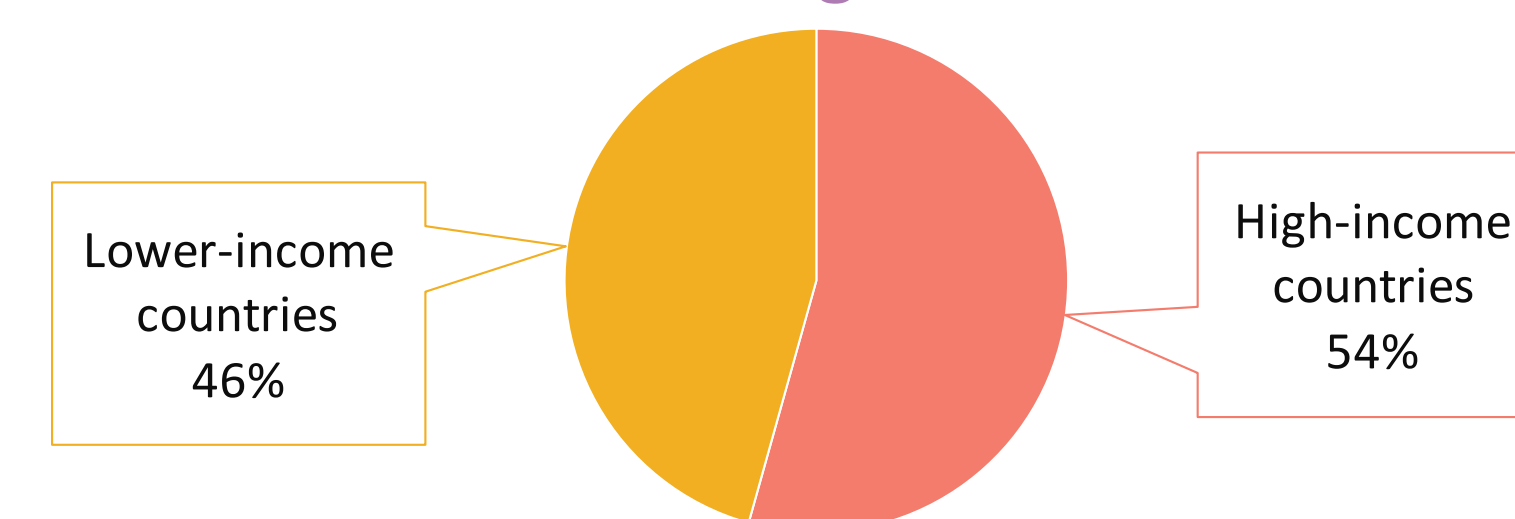
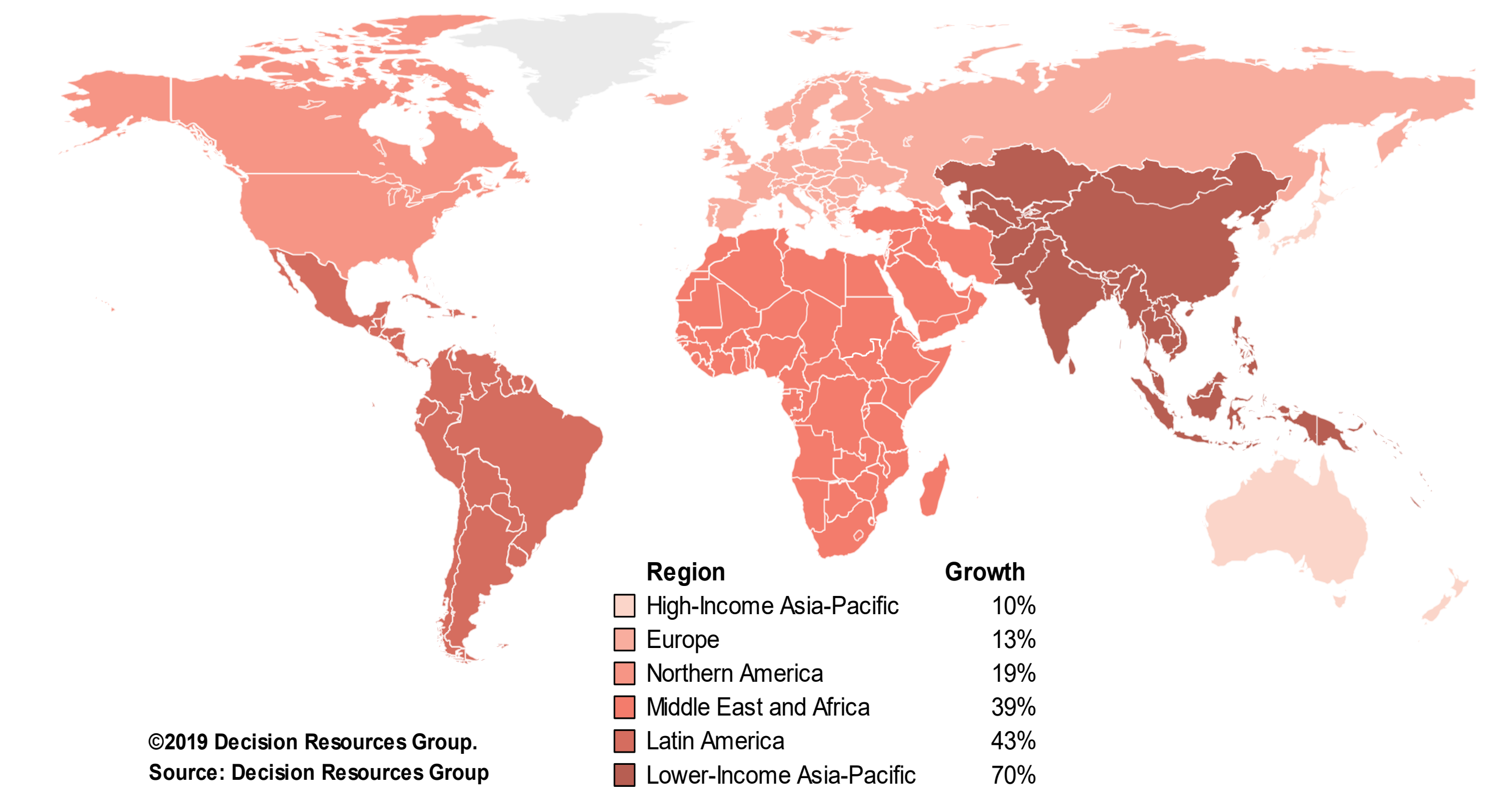


FIGURE 3: Split of Incident Cases Between High-Income and Lower-Income Countries in 2019



There is a significant difference in the risk of RCC between high-income countries with 16 per 100,000 per year and lower-income countries with 4 per 100,000 per year. Over the forecast period, lower income countries are projected to have the highest growth rates (58%) with smaller increases in the higher income countries (14%).

FIGURE 4: Expected growth of Incident Cases between 2019 and 2029



## CONCLUSION

Global incidence of RCC varies greatly by geographic region, but there will be an increase across all countries over the period 2019 to 2029. Obesity and smoking in conjunction with changes in demographics (population growth and aging) will be the key drivers of this increase.

## REFERENCES

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