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-0-3 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.

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.

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.