

# Cost of cancer in the Austrian hospital setting

Evelyn Walter<sup>a</sup>, Monira Said<sup>a</sup>, Marilies Bauer<sup>a</sup>, Hellmut Samonigg<sup>b</sup>, Günther Gastl<sup>c</sup>  
<sup>a</sup>IPF Institute for Pharmacoeconomic Research, Vienna, Austria, <sup>b</sup> University Hospital, Graz , Austria , <sup>c</sup> University Hospital, Innsbruck, Austria

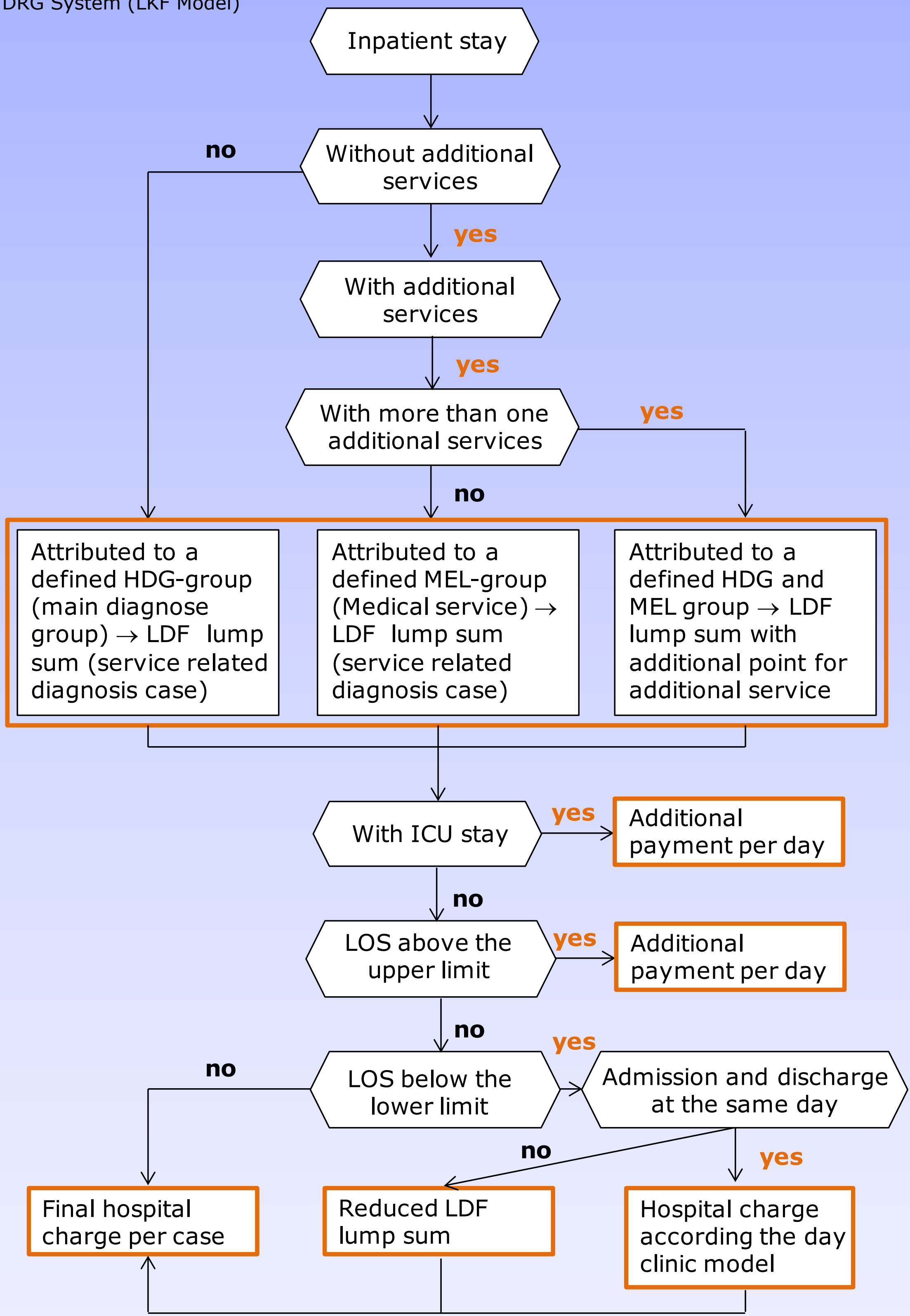
## Objectives

In Austria, 38,000 people are yearly diagnosed with cancer, which is the world’s leading cause of death, followed by heart disease and stroke. Each year, cancer is causing 19,547 deaths in Austria. Advances in early detection, prevention and treatment have led to decreasing cancer deaths and more favorable outcomes. Moreover, significant increases in the cost of cancer care have come in parallel with these advances. The cost factor related to modern cancer treatment is increasingly a matter of debate. Hence, the aim of the analysis was to evaluate the cost of cancer expressed as reimbursed lump-sums of the DRG system, number of inpatients stays and Length-of-Stay (LOS) in the inpatient setting to bring more transparency in the discussion and to bridge the information-gap.

## Methods

We performed a retrospective claim-based analysis with Austrian DRG-System (LKF Leistungsorientierte Krankenanstaltenfinanzierung) data. The DRG-System is based on ICD-10 codes. Payment consists of one or several case-based lump-sums related to defined points per diagnose and/or procedure or service (service related diagnosis case group = LDF). Every hospital discharge is assigned to a LDF and equates to a number of points. The monetary value per point affects the refunded payment (e.g. principal diagnosis HDG05.05 – malignant neoplasia of the respiratory tract - lump sum A 2,659 points equates 2,446 Euros). Our analysis included all cancer hospital admissions. The cost-evaluation is based on the refunded lump-sums of the DRG-System for the year 2011.

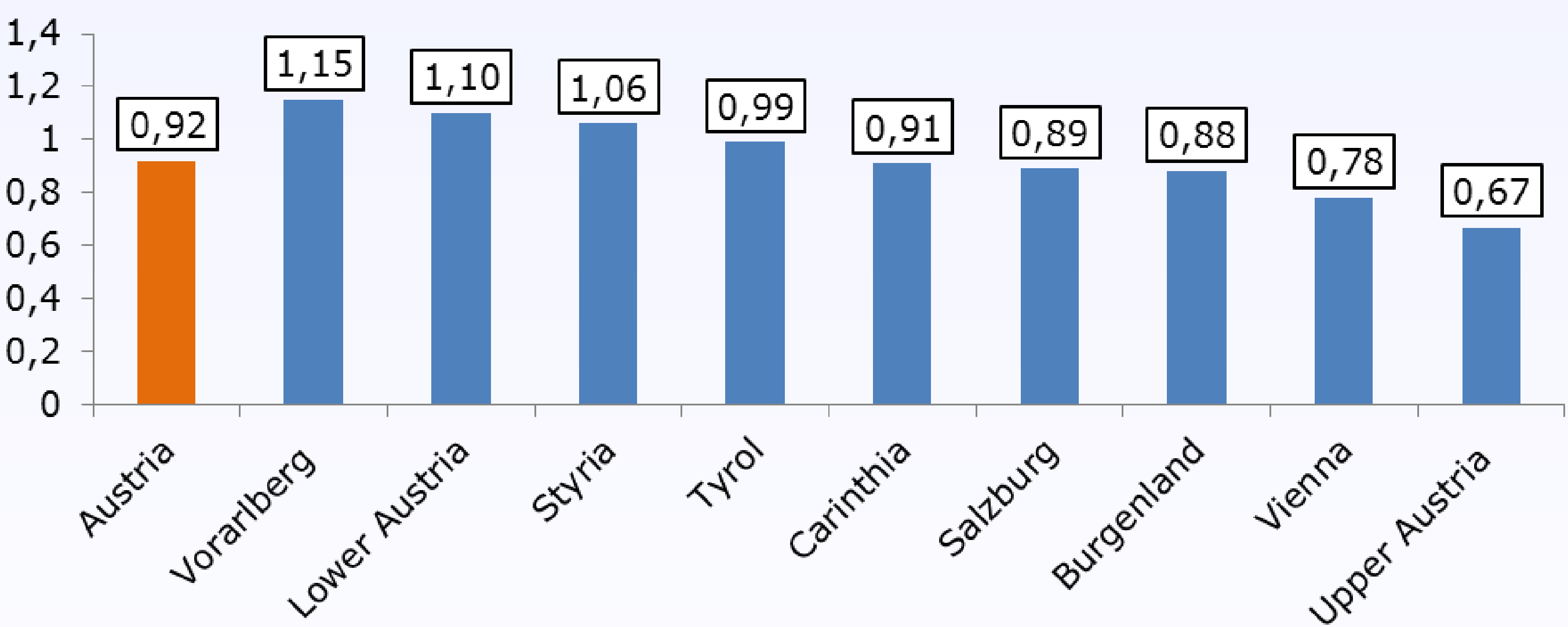
Fig. 1: The Austrian DRG System (LKF Model)



Source: Austrian Ministry of Health, developed by IPF

The monetary value per LDF point differs in the Austrian regions. The average value for Austria amounts to 92 Cents.

Fig. 1: LDF monetary value per LDF point



Source: IPF own calculations

The analysis used the following approach:



## Results

In 2011, 353,883 inpatient stays with a diagnosis of cancer were monitored. Hospital stays due to cancer accounts for 14% of the entire inpatient stays in Austria. The average LOS in cancer patients was 4.35 days and was associated with average costs per stay of 3,730 Euros. Compared with the total number of admissions, these numbers are below average (LOS: 5.43; costs per stay: 3,949 Euros).

Fig. 3A: No. of hospital stays in the Austrian regions in 2011

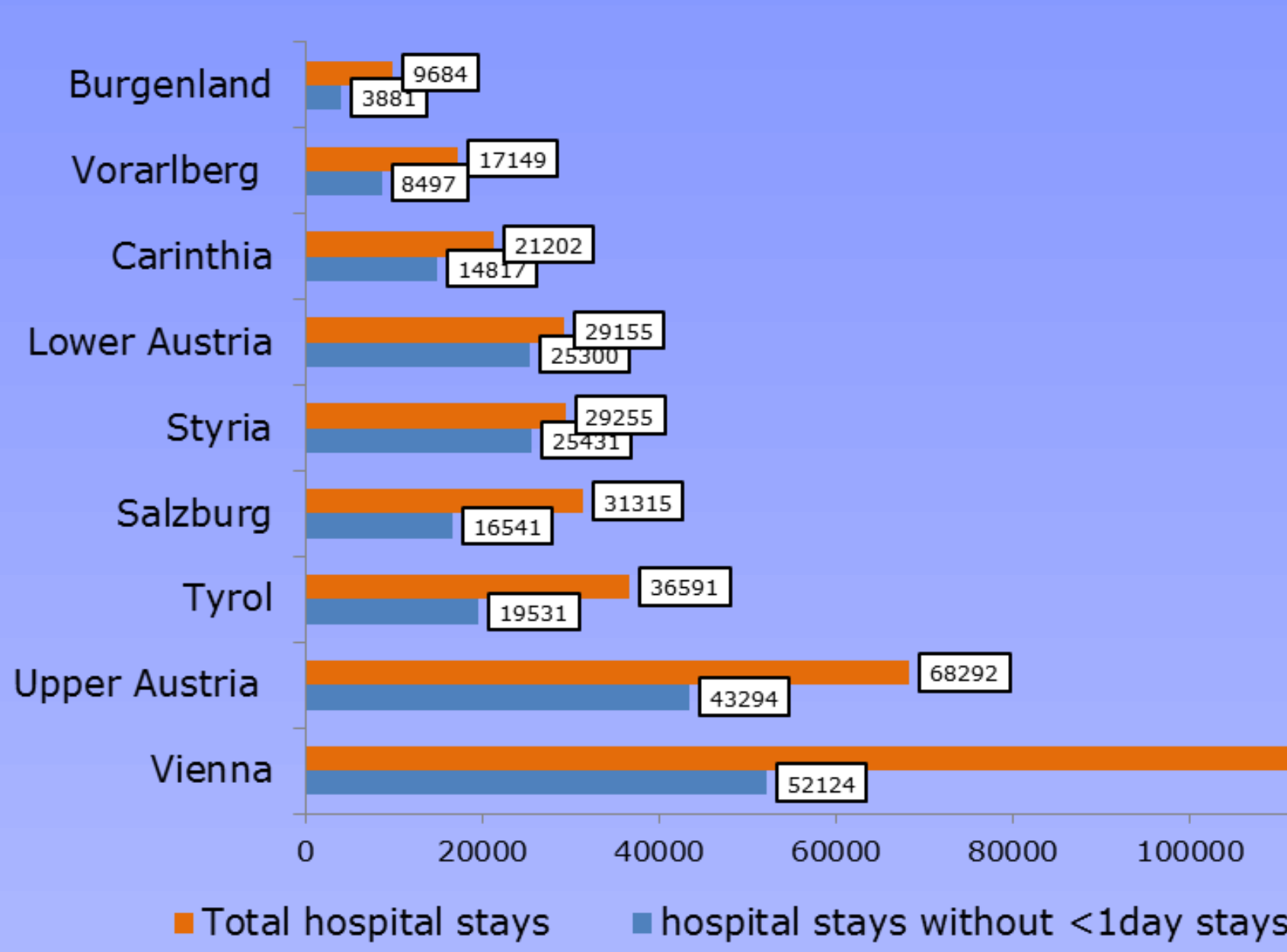
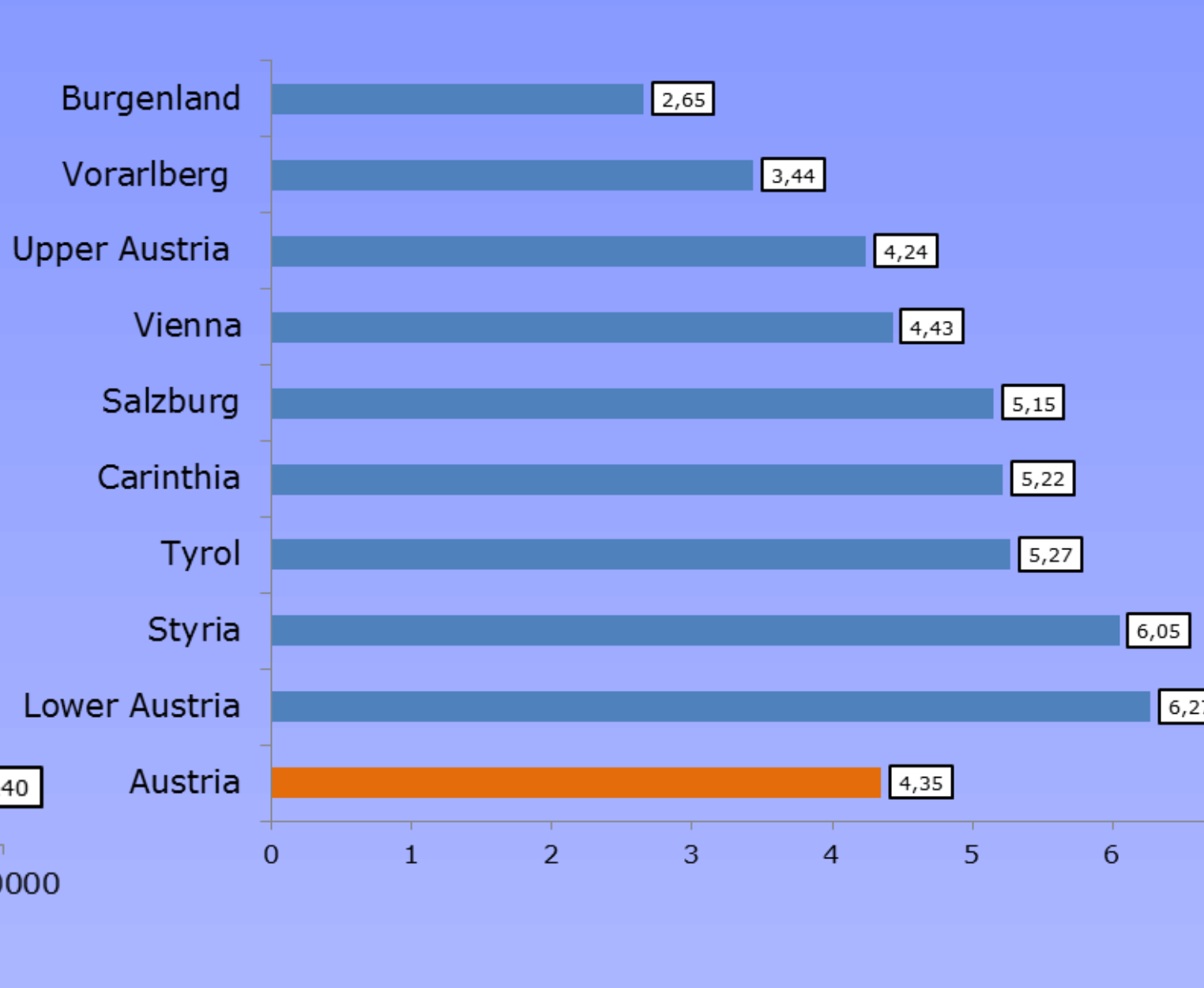


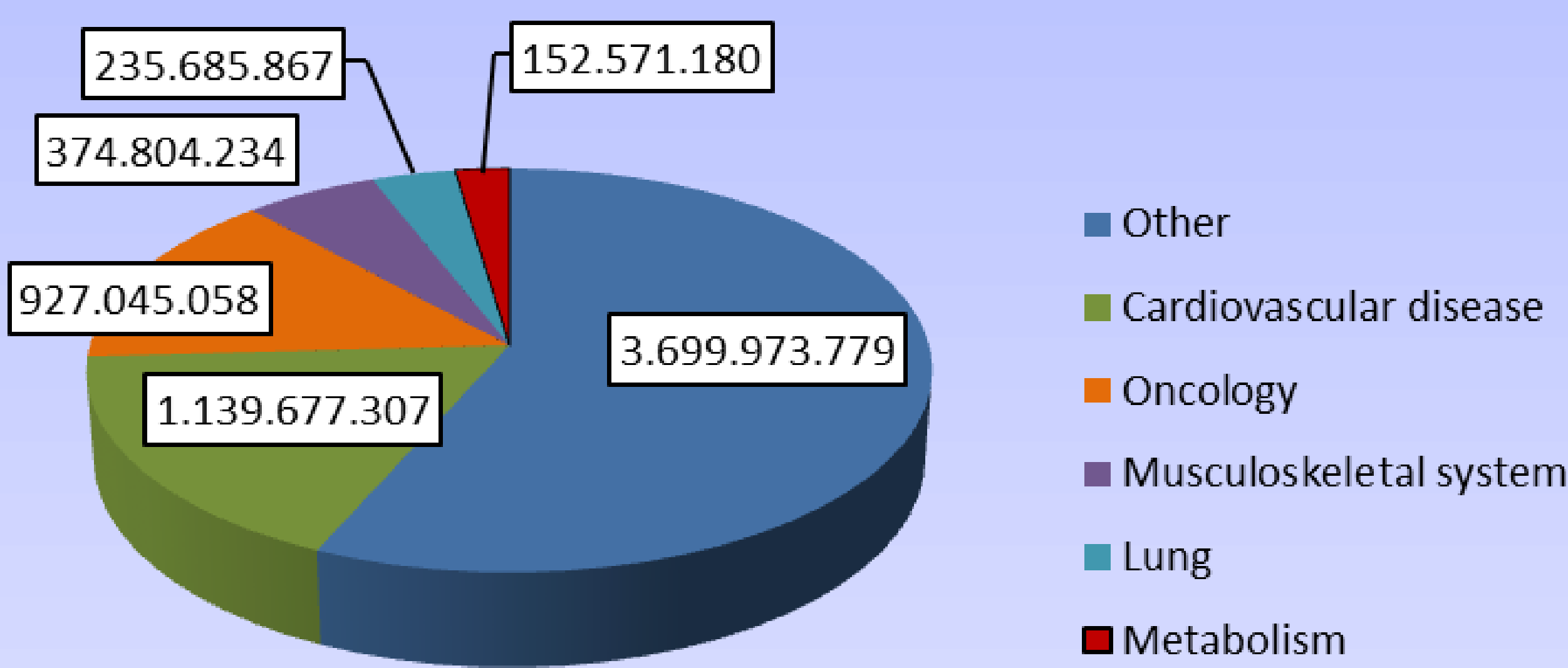
Fig. 3B: LOS in the Austrian regions in 2011



Source: IPF own calculations

Furthermore, cancer patients received medical services of a value of 927 million Euro or 14.2% of the total reimbursed lump-sums (6.53 billion Euros) in Austria.

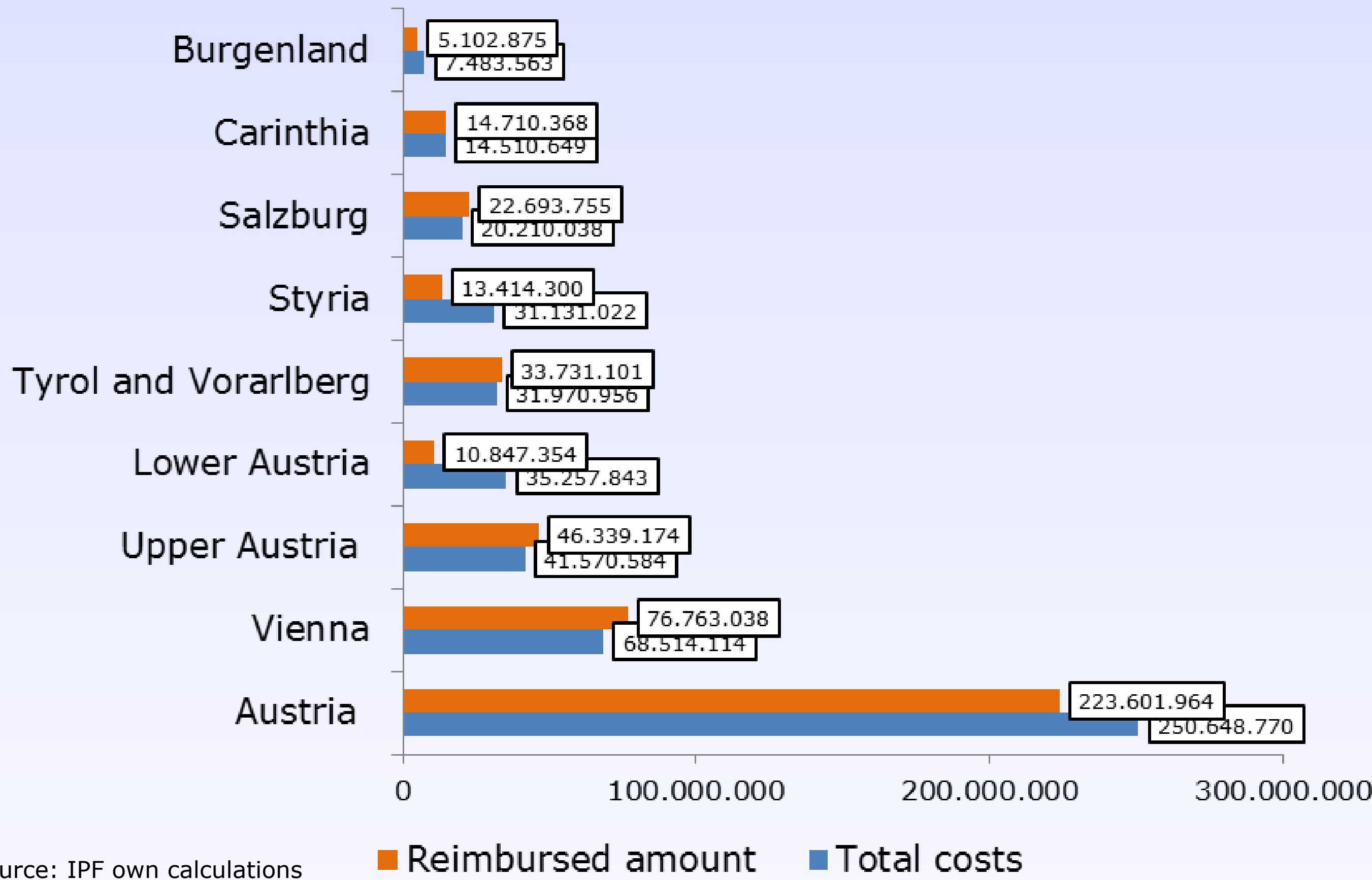
Fig. 4: Value of medical services in Euro according to medical treatment areas, 2011



Source: IPF own calculations

Out of the total 224 million Euros pertain to medical tumor therapy. With regard to monoclonal antibody therapies, 56 million Euros was refunded.

Fig. 5: Total costs for tumour therapy and the reimbursed amounts in the Austrian regions, 2011



Source: IPF own calculations

## Conclusion

The current development in modern cancer therapies leads to efficient treatment pathways expressed in higher survival rates, reduced hospital days and an improved quality-of-life.

## References

BUNDESMINISTERIUM FÜR GESUNDHEIT, LKF Katalog 2012, [http://bmg.gv.at/home/Schwerpunkte/Krankenanstalten/LKF\\_Modell\\_2012/](http://bmg.gv.at/home/Schwerpunkte/Krankenanstalten/LKF_Modell_2012/), 2012  
BUNDESMINISTERIUM FÜR GESUNDHEIT, Krankenanstalten in Zahlen: Überregional Auswertung 2011  
BUNDESMINISTERIUM FÜR GESUNDHEIT, Krankenanstalten in Zahlen: Überregional Auswertung, 2010  
BUNDESMINISTERIUM FÜR GESUNDHEIT, Interne Auswertung der ICD-10 Codierung nach Krebsarten, 2011  
BUNDESMINISTERIUM FÜR GESUNDHEIT, Interne Auswertung der ICD-10 Codierung nach Krebsarten, 2010  
GASTL G., Personalisierte Krebsmedizin, <http://www.krebspatienten.info/fokus-themen/personalisierte-krebsmedizin/personalisierte-mezizin-hintergrund.html>, 2012  
HOFMARCHER M.M. & RACK H.M.: Gesundheitssysteme im Wandel: Österreich, WHO Regionalbüro Europa, 2006  
ÖSTERREICHISCHE GESELLSCHAFT FÜR HÄMATOLOGIE UND ONKOLOGIE, Leistungsorientierte Krankenanstalten Finanzierung (LKF), <http://www.oegho.at/online-services/leistungsorientierte-krankenanstalten-finanzierung-lkf.html>, 2012  
SALK, 4. Februar ist Weltkrebstag – Was es 2012 über Krebs zu wissen gibt, [http://www.salk.at/80\\_9489.html](http://www.salk.at/80_9489.html), 2012  
STATISTIK AUSTRIA, Krebsinzidenz und Krebsmortalität in Österreich, 2012  
WALTER E; Österreichische Guidelines zur gesundheitsökonomischen Evaluation. In:PharmacoEconomics German Research Articles 2006 4(2): 55-63  
WARENVERZEICHNIS APOTHEKERVERLAG, Wareninformation Bevacizumab, <http://warenverzeichnis.apoverlag.at/>, 2012  
WARENVERZEICHNIS APOTHEKERVERLAG, Wareninformation Trastuzumab, <http://warenverzeichnis.apoverlag.at/>, 2012  
Additional Literature with the author