

THE PREVALENCE OF PROSTHETIC INTERVENTIONS IN THE AUTONOMOUS PROVINCE OF BOLZANO (SOUTH TYROL-ITALY)



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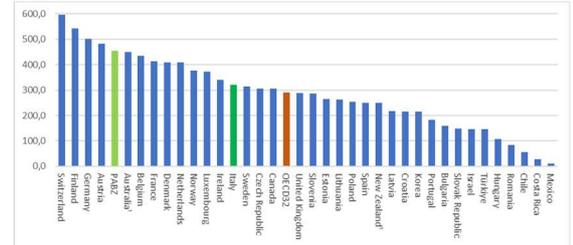
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INTRODUCTION

The Autonomous Province of Bolzano (PABZ) is one of the Italian regions with the highest hospitalisation rates for hip and knee prosthetic surgeries since 2009, with values above the average rate of OECD countries.

The aim of the study is to estimate the prevalence of prosthesis patients (hip and knee) in our province in the period 2015-2022, in order to support provincial health planning. An increase in prevalence means an increase in follow-up care and therefore an increase in revisions over time.

Rate of incidence (per 100,000 inhabitants) of primary hip and knee replacement surgery in OECD, year 2021 or last available data. (Health at a Glance 2023 - © OECD 2023)



METHOD

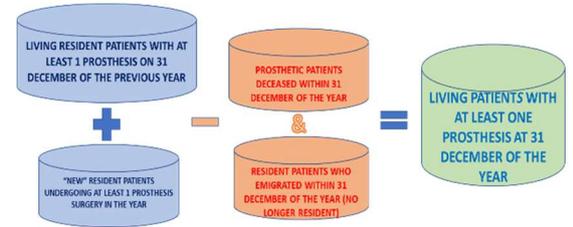
Data from the provincial archive of hospital discharge records, from 2004 to 2022, are used. The prevalence is calculated by considering living patients who have undergone at least one prosthetic intervention at the end of each year from 2015 to 2022, taking into account the natural and migration balance.

The cost estimate for revisions is based on the Health Activity Based Costing method used by the Provincial Health Economics Office for cost reporting. This method involves allocating resource consumption to the different health activities in order to determine average standard costs per output.

Data source for calculation



Calculation of living resident patients with at least 1 prosthesis at the end of every year (2004-2022)



3.6% of the PABZ population had at least one hip or knee prosthesis at the end of 2022 (prevalence was 2.6% in 2015). For the population aged 65 and over, the percentage was 12.3% at the end of 2022 (10.1% at the end of 2015). Over the years, the prevalence for each joint and in each age group has always been higher in women.

Number of living patients with a hip or knee replacement at the end of each year

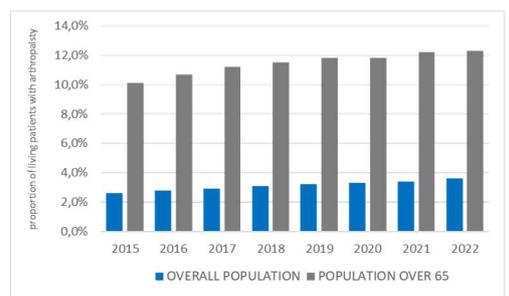


Prevalence of patients with prosthesis (by 100,000 residents)

2015			
AGE CLASS	M	W	TOTAL
0-64	81.4	78.6	80.0
>=65	838.9	1,149.1	1,014.1
TOTAL	209.3	307.0	258.8

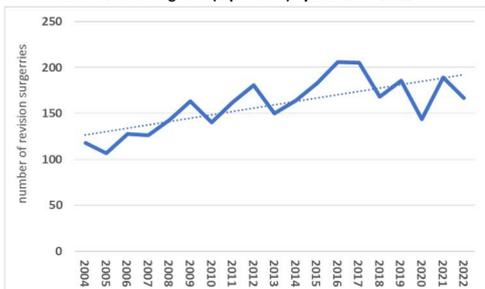
2022			
AGE CLASS	M	W	TOTAL
0-64	139.4	131.5	135.5
>=65	1,031.3	1,379.6	1,225.0
TOTAL	301.7	410.4	356.6

Proportion of living patients with a hip or knee replacement out of the total population at the end of each year



RESULTS

Prosthesis revision surgeries (hip + knee) - years 2004-2022



The trends in prosthesis revision surgery observed from 2004 to 2022 correspond to +3.0% per year (+15% for knee revisions alone, hip revisions only increased by +0.6% on average).

The estimated costs for each individual intervention of revision in 2020 amount to around €20,000 for the PHS.

Calculated costs for revision surgery

TOTAL COSTS 2022	
HIP-Revisions	2.177.059 €
KNEE-Revisions	1.651.050 €
TOTAL	3.828.110 €

AVERAGE INCREASE	
assumption of costs 2023	3.942.953 €
assumption of costs 2024	4.059.715 €
assumption of costs 2025	4.179.936 €
assumption of costs 2026	4.303.716 €
assumption of costs 2027	4.431.162 €

CONCLUSIONS

A significant proportion of the PABZ population is reported to have undergone at least 1 hip or knee replacement surgery. The prevalence of patients with a prosthesis has increased steadily since 2005. This increase has implications for the current and future organisation of care in the Provincial Health Service (PHS). This is confirmed by the growth trends in prosthesis revision surgery observed from 2004 to 2022. They are known to be very costly for the patient and the PHS. The estimated cost of each intervention in 2020 is around €20,000 for the PHS and the total cost of these interventions alone will be more than €4.5 million for the provincial budget over the next three years. Knowing the prevalence and how it is changing is crucial for future planning of the prosthetic sector in the PABZ.