Budget impact of ACTIS™ hip system and KINCISE™ 2 system in patients undergoing primary total hip arthroplasty in Germany

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INTRODUCTION:

- Total hip arthroplasty (THA) is one of the most successful surgical procedures in orthopedic and trauma surgery as it offers significant pain relief, improved quality of life, and increased mobility to patients with osteoarthritis of the hip.[1]
- THA prevalence is projected to rise by nearly 60% - from 172 to 275 per 100,000 between 2021 and 2050, and reaching 2.8 million procedures annually across OECD countries[2,3] - driven by rising obesity, earlier osteoarthritis onset, population ageing, and demand for better mobility and quality of life.[4,5]
- Despite the high clinical success of THA, postoperative complications occur with cost to the health care system.[1]
- In US, ACTIS™ Hip Solutions is the most commonly implanted femoral stem per the AJRR 2025 annual report[#].[6]
- With 7 years of joint registry data, the ACTIS™ Hip Stem demonstrates better patient outcomes compared to class[§].[7]
- KINCISE™ 2 Automated Surgical System is the only automated surgical impactor approved for Knee Revision and Hip Revision.[8,9,10]
- The KINCISE™ 2 Automated Surgical System was designed to provide orthopaedic surgeons with a device that aims at improving surgical efficiency.[11]

[#] ACTIS Hip Solutions in AJRR 2025 Annual Report
[§] Outcomes refers to survivorship

OBJECTIVE:

The aim of this study is to compare the budget impact of the combined use of ACTIS™ hip implant and the automated impactor KINCISE™ 2 system compared respectively to other hip implants and manual technique in patients undergoing primary THA in Germany.

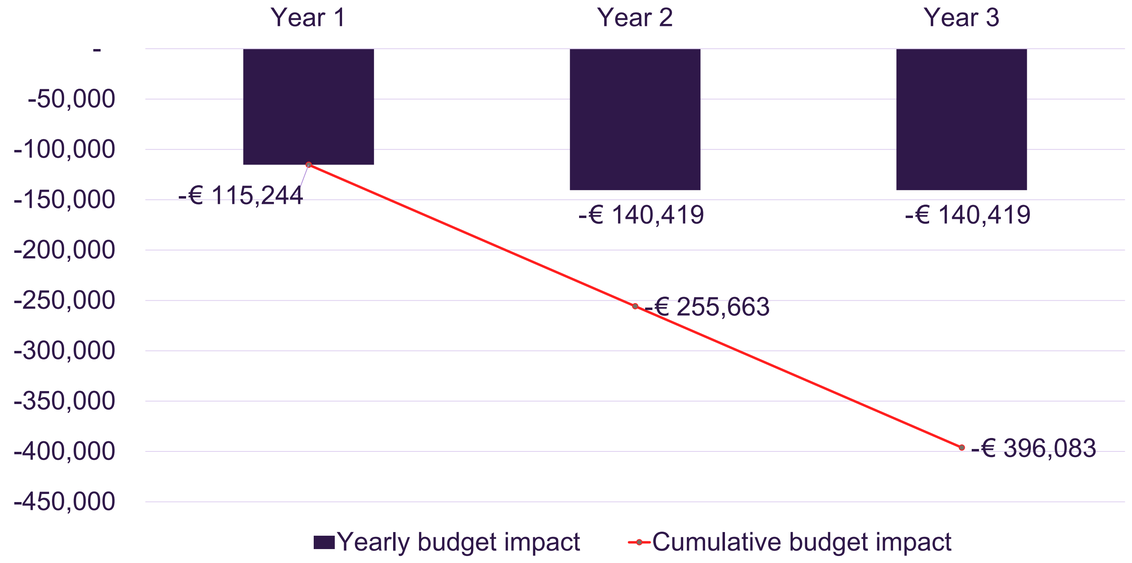
METHODS:

- We developed a budget impact model inclusive of all relevant potential resources to estimate the costs of primary THA over 3 years with annual cycles (no discounting).
- The analysis was conducted from the German healthcare system perspective.
- The model assumed 200 primary THA procedures per year, 600 total.
- In the **intervention scenario**, patients received an ACTIS™ hip implant through KINCISE™ 2-assisted THA; in the **comparator scenario**, patients received other hip implants using manual technique for THA.
- Model inputs included product costs, procedure volume, surgical time and length of stay.
- Inputs for resource consumption and costs were based on recent scientific published literature, public databases, and public reimbursement tariffs, and all costs were adjusted to 2025 values (Table 1).

RESULTS:

Over a 3-year period, the budget impact analysis demonstrated that the combined use of ACTIS™ hip system and the KINCISE™ 2 system generated overall savings of €369.083 (Figure 1 and Table 1), corresponding to €660 per primary THA procedure (Table 2).

FIGURE 1. INCREMENTAL ANNUAL AND CUMULATIVE BUDGET IMPACT OF THA USING THE ACTIS™ HIP SYSTEM AND THE KINCISE™ 2 SYSTEM



These savings were driven by a reduction in operating room time of 23% following adoption of the KINCISE™ 2 system compared with the manual technique, translating into €88.987 in cost savings.

Additional savings were achieved through a reduced length of stay by 19% with the ACTIS™ hip system compared with other hip implants. These factors contributed to further savings of €307.096. (Table 2 and Table 3).

TABLE 2. COST BREAKDOWN OVER 3 YEARS

	Intervention	Comparator	Incremental costs
Surgical cost (€)	€1.220.543	€1,309,530	- €88.987
Length of stay (€)	€1.309.197	€1.309.197	- €307.096
Total (€)	**€2.529.740**	**€2.925.823**	**- €396,083**

TABLE 1. CLINICAL, RESOURCE USE, AND COST INPUTS

	Intervention	Comparator
Hospital costs		
Surgical time (minute/procedure)	43.9* (23% reduction[13])	57[12]
Cost per operative room(€/minute)	€16.5[14]	
Surgery cost** (€/procedure)	€2,034	€2,183
Length of stay (days/procedure)	4.9* (19% reduction[1])	6.1[15]
Cost per length of stay (€/day)	€441.6[15,16]	

* Calculated on basis of reported reduction rate
** Including implant cost, medical equipment and operating theatre[14]

TABLE 3. AVERAGE ECONOMIC IMPACT PER PRIMARY THA

	Intervention	Comparator	Incremental costs
Surgical cost (€)	€2.034	€2.183	- €148
Length of stay (€)	€2,182	€2,694	- €512
Total (€)	**€4.216**	**€4.876**	**- €660**

CONCLUSION:

Compared to other hip implants and manual technique, ACTIS™ and KINCISE™ 2 system were associated with resource optimization and cost savings in Germany.

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