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International Society of  
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10<sup>th</sup> International Congress of Arthroplasty Registries

2<sup>nd</sup> Virtual Congress

Copenhagen, Denmark, November 11-13(14), 2021

# Procurement strategies of arthroplasty prostheses in Italy and outcomes of procedures: a study of the Italian Arthroplasty Registry

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## Introduction

Public procurement auctions have become increasingly used by healthcare organizations for medical device procurement, given advantages regarding transparency and higher competition. However, if not properly designed, auctions may not ensure that the purchased devices are of high quality.

This study's main aims were to describe the Italian auction-based public procurement procedures used to procure arthroplasty prostheses and investigate any association between them and the procedures' outcomes.

## Materials and Methods

Data on implants from the Italian Arthroplasty Registry for 2015, 2016 and 2017 and on auctions from the National Anti-Corruption Authority for 2010-2018 were combined. Analyses were performed using descriptive, regression and econometric methods.

## Results

About 30% of the analyzed auctions had a single participant, thus indicating no real competition in those auctions. The starting prices varied considerably as did the winning rebates. The framework agreement was the prevalent contractual form. Because of the short observation period, the obtained probability of early revision of specific devices was not statistically significant. Surprisingly, hammer prices did not change as the market concentration among suppliers changed: a likely explanation lies in the change in contractual forms and procurement procedures that accompanied supplier concentration and that entailed both a reduction of framework agreements and an increase of negotiations as awarding procedures.

## Discussion/Conclusion

Health policy making can benefit from more research on procurement of medical devices. Conducting such research in the field of orthopaedic prostheses requires the availability of a unique patient identification code, longer historical series and more interconnected databases.

*This study was coordinated by the Italian National Institute of Health and supported by the General Directorate of Medical Devices and the Pharmaceutical Service at the Ministry of Health.*