

**TITLE:** Assessing funding inequalities between elective and urgent surgeries of the musculoskeletal system in French funding mechanisms.

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[Include your abstract according to the headings below. Abstract body in Arial, font 12. Limit to 500 words, including text in tables and figures.]

## **Introduction**

For a given medical speciality, an unplanned hospital stay is on average longer and more severe than a planned stay. Additionally, the unplanned stays are mostly taken care of in some hospitals when others only do planned stays: forcing the formers to treat less patients than they could, with similar capacities, to face emergencies that could arise. Furthermore, the funding for a hospital stay does not consider whether it is planned or not in the French funding system.

## **Methods**

In this study, we considered the example of the musculoskeletal system surgery as any hospital that can perform urgent surgeries could also perform elective surgeries with similar material and staff.

We, firstly, sorted the case mix between planned and unplanned surgeries. Then, we estimated the characteristics of the planned surgeries that each hospital could perform.

We estimated how many more elective surgeries a given hospital could perform with the same staff and capacities in two scenarios. In a first scenario we considered that the stays associated with urgent surgeries had similar characteristics (e.g., length of stay) than the stays of the elective ones. Then, we assessed a scenario in which every hospital treated only elective surgeries.

Lastly, we estimated how much more fundings the hospital would get in both scenarios with the new case mix.

## **Results**

According to both methods 87% of hospitals with musculoskeletal system surgery could earn more fundings by switching part or all their urgent surgeries to elective surgeries in this medical speciality.

In the first scenario (resp. second scenario) 50% of hospital would earn between 0.5% and 19.9% (resp. between 3.4% and 37.1%) more fundings than they currently do. In addition, 25% would earn more than 20% (resp. 37.1%). The results between both methods highly correlate but the second one shows significantly higher levels of correction.

## **Discussion**

On the one hand, the differences between the results of both scenarios demonstrates the difficulty to estimate to which extent the hospitals lose fundings by doing unplanned surgeries instead of planned surgeries. On the other hand, we demonstrated than current

funding mechanisms benefit hospital with high percentages of planned surgeries. The exact degree to which some hospitals benefit from the current funding mechanisms remains unanswered with this study.

The findings of the study may help to create an additional funding mechanism to better fund the urgent surgeries. These fundings could help the hospitals to better face emergencies. Additionally, it could give incentives to the hospitals not treating patients with urgent surgery needs today to perform more of these surgeries. Hence, balancing more efficiently the constraints between the hospitals.