Orthognathic surgery is used to correct discrepancies (such as malocclusion, mandibular, sagittal, vertical and transversal ones) in the skeletal structures of the face. The procedure consists of a series of osteotomies to allow the correct repositioning of facial bones, which are then fixed in position by internal plates and screws.

Despite the many different types of materials available on the market, the Brazilian Society of Otorhinolaryngology (Sociedade Brasileira de Cirurgia Maxilofacial—SBICM) has not issued any guidelines or recommendations describing the preferred techniques of maxillo-mandibular surgery, which special materials should or should not be routinely used or which could be replaced by less costly ones. This lack of guidance by an official body may be one of the reasons behind the immense variability in the costs of materials that are used to perform orthognathic surgery in different regions of the country.

Our goal was to map the materials requested for orthognathic surgery across Brazil providing an overview of current practices and the possible economic impact they might have for the PHS.

**Methods**

A anonymized demographic and clinical real-world data (RWD) were selected from Auditron® (Evidence-Fronter Health database of claims) for all orthognathic surgeries performed between 2015-2016. Auditron® is a database of claims which includes information provided by over 50 health insurance companies (HIC) in the private health care system in the country.

We included only cases of maxillo-mandibular corrections, excluding surgeries for tumor removal or facial repair in children.

The list of essential (fixation plates and screws) and supplementary special materials (SSM) and their distribution were also extracted.

These are the SSM with comments on possible replacements:

**Tungsten micro needle:** these are used to perform microsurgical dissection and or cutover bone. They can be replaced by regular electrocautery microdissection tips.

**Ultrasound osteotomes:** these can be replaced by drills and or osteotomy blades.

**Implantable Intermediate fixation screws:** these are auxiliary materials used for intra-operative osteosynthesis. They can be replaced by non-invasive options such as hooks in orthodontic brackets.

**Bone substitutes (blocks, grafts, pastes):** used to fill gaps inside the maxilla to avoid lack of contact and development of pseudo-arthrosis.

**Re-absorbable membranes:** these are used to cover bone grafts, but they are not considered essential materials.

**Virtual or prototyped surgical guides:** may be replaced by conventional acrylic guides.

**Surgical hemostatic agents:** these are hemostatic gels, sponges, or solutions. The procedure of these is used to perform better quality-of-care for patients and saving resources for PHS.

Detailed information was available for requests of orthognathic surgery made for 51 patients. All these requests come with more than one budget proposal and Table 4 shows that the highest budget per geographic region is the cost of SSM that on them.

**Table 3:** Details of requests from surgery issued from HIC in the North region did not have the proposed budgets attached and some of these were rejected.

**Table 4:** These variations in brands, models, quantities and costs of requested SSM suggest a lack of uniformity among the conditions that could have an economic impact for PHS.

**References**


5. Evidências – Kantar Health, Campinas, São Paulo, Brazil


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**Figure 2:** Differences between the highest and lowest budgets per region.

**Figure 3:** Differences between the highest and lowest budgets per patient.

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**Figure 4:** Differences between the highest and lowest budgets per patient.