Handout

Logistical connection/processing

Version 3.0

mediCAD®
The Orthopedic Solution
www.mediCAD.eu

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LOGISTIC

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1. Presentation of the topic: logistical connection/processing

Dear implant manufacturer:

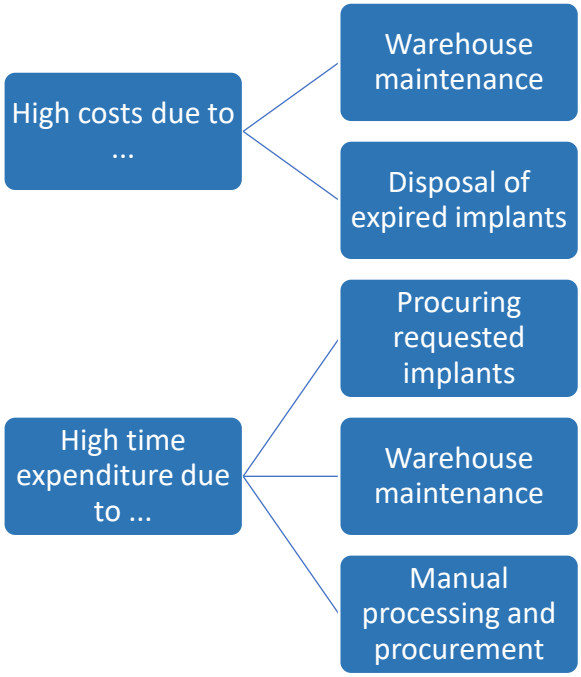
The subject of logistical connection is becoming increasingly important to you and your customers. You incur high costs and additional effort especially with respect to the maintenance of consignment warehouses. It is mostly small-scale manufacturers who are unable to meet these requirements.

The disadvantage experienced until now was the time-consuming storage process starting from surgery planning to the operation itself. There are also often delays during this process if an implant is not in stock. In light of this, we are now introducing the new **"Logistical connection/processing"** project. This reduces, or even does away with the need to maintain the consignment warehouse and ensures implant request handling just-in-time wherever possible.

2. Current situation

The doctor creates a plan in mediCAD® Classic or mediCAD 3D – usually one day before the scheduled surgery – and selects an implant that is optimized for the patient. This size is then taken from the consignment warehouse provided by the implant manufacturer in time for the surgery. This storage requires space, needs to be maintained by personnel and results in high costs. And if the desired implant is not in stock, or it is a special size implant, the effort required is very high. The request now needs to be filled out painstakingly by hand and forwarded to the implant manufacturer or sourced by other clinics in the area. By contrast, there are also some implants in the warehouse which are never used and need to be disposed of once their use-by date has passed. This incurs costs which are to be prevented with the new project.

2.1 Disadvantages of the current situation



3. The goal

The project aims at finding out how an ordering system can work most smoothly and whether it can be brought in line with hospital organizational procedures. It is also important to determine the extent to which consignment warehouse maintenance can be minimized. Optimized logistics should ultimately lead to major cost and time savings. Just-in-time logistics with a reduction in consignment goods would be optimal.

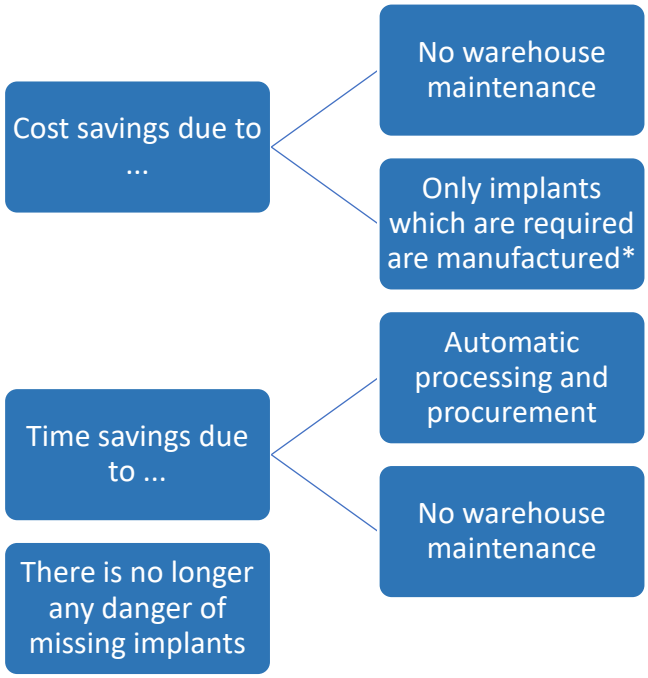
4. Potential new logistics paths

4.1 A new way with just-in-time logistics

Current logistical procedures are intended to be replaced with “just-in-time” logistics. Customers plan their surgeries as usual using mediCAD® Classic or mediCAD® 3D and decide on the best implants. The selection is now automatically and simultaneously transmitted to the implant manufacturer. The request is processed and the implants are sent automatically to the customer in time for the scheduled operation. The data are now transferred automatically and not manually. Surgery can now commence without any issues on site.
The consignment warehouse can be terminated and the required implants are delivered just-in-time.

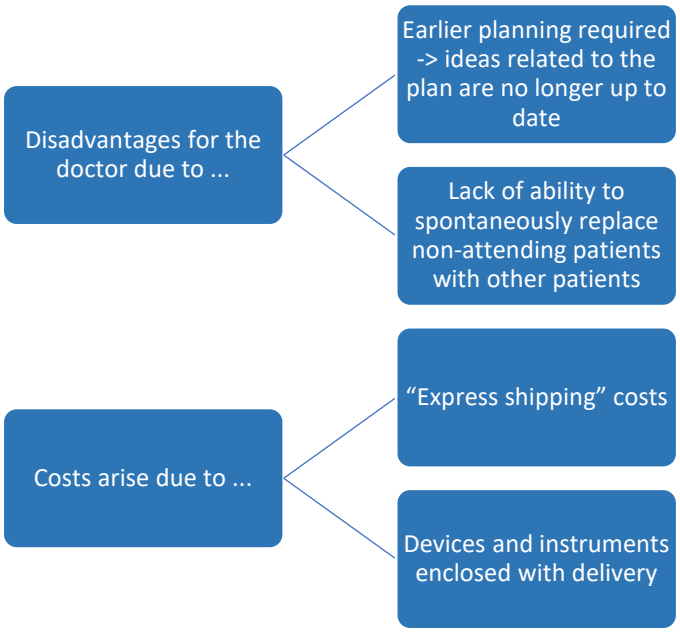
An example of this system where orders can be delivered “next day” exists in Austria. However, this only covers Greater Vienna, Linz and Graz. The remaining hospitals (the majority) cannot be supplied using this principle. “Express shipping” incurs additional costs of almost € 60.

4.1.1 Advantages of just-in-time logistics



*1/3 of implants made available will not be used!

4.1.2 Disadvantages/risks of just-in-time logistics



4.1.3 Requirements

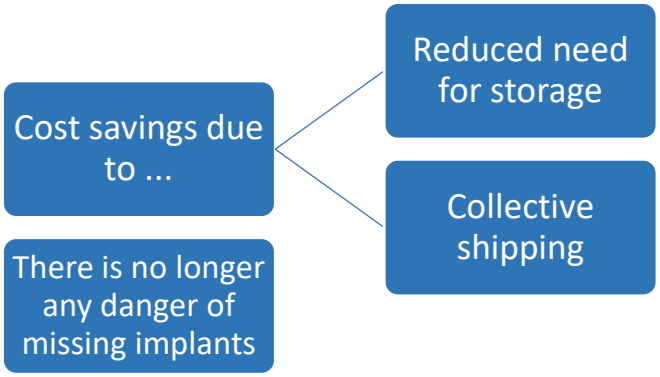
The following requirements must be met in order to implement functional just-in-time logistics:

- Information from the plan must be retrieved and transmitted to the partner without problems
- Item numbers must be present in the .xml file to ensure the implant manufacturer can access the information
    - Item numbers must be stored in the implant template DB information
- The implants read out from the plan must match the plan and actual situation to prevent erroneous orders
    - Planning must be performed accurately
- The period of time between sending the information and the surgery must be observed

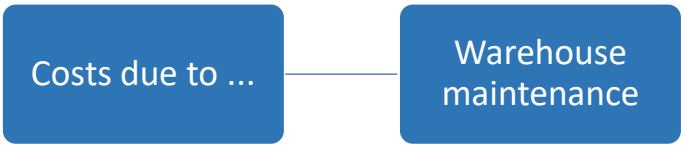
4.2 A new method through collective shipping

It is often the case that the doctor starts planning on the previous day and performs a large number of operations during the subsequent 1–2 days. This frequently involves use of the main implant sizes. These continue to be available and in stock. Special sizes are no longer held in the consignment warehouse but are instead ordered collectively.

4.2.1 Advantages



4.2.2 Disadvantages/risks



The question here is whether the warehouse inventory can be reduced by removing marginal sizes.

4.2.3 Requirements

Attention must be given to the fact that the in-house CIS (SAP) uses item numbers different to those of the manufacturers.

If implants are reordered for the warehouse using the current procedure, patient information will and may not be sent along.

The CIS, in turn, features a different reference number for the patient compared to PACS. Case number for CIS, patient ID for PACS. These are not linked to one another anywhere.

This means it is not currently possible to trigger an order in the CIS and assign this to a patient using the planning information exported from mediCAD (patient ID).

Assigning this with reference to the plan and (theoretical) surgery date would be an important consideration.

5. Technical procedure

5.1 mediCAD® Classic

Plans are to be automatically read using the .xml file from the Endodok report.

The implant manufacturer accesses the item numbers contained therein to accept the order.

```
</MeasurementSet>
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        <FriendlyComponentName>DePuy Synthes Pinnacle, cup</FriendlyComponentName>
        <BodySide>right</BodySide>
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        <Info id="kind">cup</Info>
        <Info id="type">Pinnacle</Info>
        <Info id="article_number"></Info>
        <Info id="description">Typ:Pinnacle Acetabular Cup System,Description:0 Head Center,Size:52mm,</Info>
        <Info id="size"></Info>
        <InclinationAngle>45.0</InclinationAngle>
</Component>
<Component>
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        <Info id="size">12</Info>
</Component>
```

Figure 1. Example of an .xml planning file – the information from the selected implants can be seen. Yellow marking: information to be read

The project is being tested in combination with the “MediMark” project.

One problem is that the in-house CIS (SAP) uses item numbers different to those of the manufacturers.

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