

# Aesculap<sup>®</sup> Service Systems

Instrument Management at Robert-Bosch-Krankenhaus Stuttgart



Practical Experience Report

# Instrument Management in the CSSD



**Process optimisation in the CSSD – is it worthwhile?** A justifiable question, when one considers the kind of comprehensive process and Instrument Management that is demanded by the complex nature of a central sterile supply department (CSSD). But this challenge carries with it great potential.

Hospitals are increasingly being confronted with legislative requirements, higher demands for legal security and patient safety, continuous quality control through validated processes. On the other hand the need for cost transparency does not stop at the door of the CSSD.

The Robert-Bosch-Krankenhaus in Stuttgart carried out a comprehensive process optimisation programme in the CSSD as part of the hospital's quality management. The central component of this programme was a screening and optimisation project for the entire instrument stock as well as the complete introduction of the instrument management software instacount®. Jochen Geiger, the head of the hospital's CSSD, reported about the objectives, implementation and results of this extensive project.

## The German legislation requires the introduction of a quality management system. What does this mean for the CSSD?

Quality here means fulfilling the demands made on the end product in the CSSD, the sterile goods. Apart from the legal regulations of the Medical Product Law and the Medical Products Operations Ordinance and the hygiene requirements of the Robert Koch Institute, there is an ever increasing need to consider the economic aspects of sterile goods production and to

develop and use optimisation potential. Thus the emphasis is on optimising the work processes within sterile goods supply, further developing the qualification of the CSSD staff, screening and optimising the existing instruments in trays and sets and creating extensive cost transparency for the CSSD business area. The creation of a quality manual can also substantially reduce the liability risk in claims for damages. Last but by no means least, these various measures mean that the patient receives the best possible care.

## What was most important in planning the process optimisation programme?

To make clear how important the CSSD is for all departments and all processes within the hospital. The CSSD management has responsibility for the entire stock of reprocessible instrumentation and therefore also for ensuring that legal regulations and quality guidelines are observed whilst taking the costs incurred into account. It soon became obvious that with a professional Instrument Management System we would be able to lighten our staff's wor-

kload and realise substantial cost savings in the medium to long term. Finally, we had to make everyone aware that in the end all areas within the hospital would benefit from optimising the processes within the CSSD.

## Who participated in this project?

After detailed discussions with the hospital management and the doctors responsible for the various specialist departments it was clear that the project would not be possible without external support. We decided to work with Aesculap because the concept they presented entirely

satisfied our needs for long term cost saving, transparency and process optimisation. In addition, Aesculap designed the implementation strategy to closely correspond with the existing CSSD staffing and organisational arrangements, thus guaranteeing that the CSSD could continue to operate as smoothly as possible even during the implementation phase.

## Which precise measures have been taken?

Machine capacities had to be investigated and the programme cycles optimised to reduce reprocessing times. We validated

the sterilisation processes and the processes in the existing cleaning, disinfecting and drying machines and implemented the sterile goods documentation system instacount®.

Another important point, if not the most important, was that our instrumentation stock was looked at ...

## ... because the hospital's instrumentation stock represents a very substantial tie-up of capital?

Exactly. And so this is where the biggest potential cost savings lay. Therefore we agreed with the experts from Aesculap to carry out a comprehensive Inventory Analysis and subsequent optimisation of our instrument sets.

## How should we imagine an Inventory Analysis?

The objective of an Inventory Analysis is to make a quantitative analysis and a qualitative assessment of the hospital's entire stock of instruments, in order to assure and improve the quality of the existing instrumentation. This includes motor systems, scopes fibre optic cables and other accessories.

ROBERT  
BOSCH  
KRANKENHAUS



Jochen Geiger is head of the CSSD in the Robert-Bosch-Krankenhaus in Stuttgart.

The Robert-Bosch-Krankenhaus offers centralised treatment services with additional specialist functions. Since 1978 it has been one of the Academic Teaching Hospitals of Tübingen University. The Robert-Bosch-Krankenhaus admits more than 26,000 in-patients per year. 1,300 employees ensure that patients receive individual attention.

The hospital has nine operating theatres, a pharmacy, nursing school, research and training facilities and a modern scientific library, as well as affiliated research institutes for clinical pharmacology and the history of medicine.

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In an detailed evaluation report repairs and any new purchases necessary are listed with transparent costing, and the instruments and types of sets are described in all their variety.

## How was the Inventory Analysis proceeded?

One instrument set from every set type was screened. For example, the cardiac surgery

department has 34 basic sets, of which one was used for screening and for the Inventory Analysis, since all 34 sets have the same contents.

The instruments were examined according to the following criteria:

- surface quality
- signs of wear
- age structure
- identification number

- repair requirement
- weight
- manufacturer/origin

The results were extrapolated to all 34 sets:

One basic standard set contains 90 instruments, giving a total of 3,060 instruments for 34 sets. 1,360 instruments were in good condition. 680 instruments had to be sent for surface refurbishment. 646 instruments needed to be repaired and 374 instruments had to be removed from the sets and new replacements purchased. The total value of these 34 standard instrumentation sets amounts to around 270,000 Euro.

All other instruments, sets and reserve stocks were inspected and valued in the same way as the example I've just given. The results were presented to all the people involved in a detailed report of the current situation and served as a basis for deciding how to proceed.

## How had been proceed after the analysis had been made and the results presented?

On the basis of the screening exercise, we tackled the real core of the project: Set Optimisation. Optimising the existing instrumentation can only be successful when the people with real responsibility make the

decision together, whether each individual instrument should remain in or be removed from the instrument trays, sets or repair stock. These people are the doctor in charge of the respective hospital discipline, the theatre manager and the head of the CSSD. Here too, Aesculap always involved all the key people and it was jointly decided which instrument was really necessary in the sets or which was surplus to requirements.

Since the instruments are very valuable and it is extremely important to maintain their value, Set Optimisation pursues a variety of objectives:

- avoid unnecessary oversterilisation of instruments
- clearly visible and well organised contents
- reduce the weight of the sets
- achieve optimum instrument utilisation
- integrate instruments in other sets
- simplify processes
- reduce reprocessing costs
- improve quality

Old instruments were sorted out and disposed of, new replacement instruments were purchased and substituted in the sets. Instruments that were no longer required were removed from the sets and those needing repair were delivered set by set to the Aesculap Technical Service, to avoid any instrument shortfalls in the ope-

rating theatre. All packing lists were revised and entered into instacount®.

## What has been reached by the Set Optimisation?

Because of the Set Optimisation exercise we were able to reduce the 13,000 instruments screened by more than 3,400. These more than 3,400 instruments weigh 178 kg and have a value of around 240,000 Euro.

This means that today we have to move around 32 tons of instruments less per year. At a calculated set utilisation rate of 70% and an average of 260 working days a year, this represents a reduction of more than 620,000 instruments that no longer have to be transported, washed, packed and sterilised.

The result: fewer different types of sets and a better overview of our instrument stocks and thereby substantial savings in repairs and new purchases as well as in instrument management.

## How could the Set Optimisation with today's point of view be judged?

The success of the Inventory Analysis and subsequent Set Optimisation depends above all on cooperation across departments.

All those involved have become aware of the importance of the CSSD and the associated instrument management issue. We found the cooperation with the Aesculap specialists very worthwhile and of great importance in this case, and we profited from their expertise at each stage of the project.

Standardised work processes, full documentation and total traceability as well as the controlled use of each instrument set ensure the greatest possible safety and security and have already led to noticeable cost savings in the medium term. A possible accurate determination and allocation of costs for all process steps provide a solid basis for accounting and investment planning.

Finally, we concluded a maintenance contract for our surgical instrumentation between Aesculap and the Robert-Bosch-Krankenhaus to guarantee the quality of our instruments long term.

## Which problems can arise in the CSSD if no computer-based Instrument Management System is used?

It is easy to lose the overview of where material is stored, and this inevitably leads to more time being spent in processing orders. Another problem is mistakes in delivery or

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lack of delivery owing to writing or reading errors in the ordering process. Again and again there are reports of under or over supply in the CSSD because of inadequately defined usage quantities. In this situation it is impossible to achieve transparency of costs or create efficient work processes in the CSSD. These are all factors that cause unnecessarily high costs. Moreover, without a computer assisted Instrument Management System it is becoming increasingly difficult to comply with the legal requirements for quality assurance and complete documentation.

## Following on from the Set Optimisation Aesculap's Instrument Management System instacount® had been implemented in CSSD. Why did he decide on this particular system?

We thought it was especially important to have a system that was easy to understand and use and that conformed to quality requirements. After all, people working in the CSSD are not computer specialists. It should be capable of monitoring the instrument stock, warehouse movements and production, controlling repairs and inven-

tory and recording operating costs. The machinery, such as, cleaning, disinfecting and drying machines as well as the sterilizers, was also linked to the system. The instacount® instrument management software makes it possible to charge costs directly to cost centres, providing the transparency of costs that is so important for the CSSD. The most important objectives were medium to long term cost savings and efficient quality assurance.

## Were these objectives achieved?

Yes. Today we know precisely at practically any point in time which instrument set is being used where and for what purpose. For the CSSD staff in particular, switching over to the computerised system lightened their workload tremendously. A further advantage against the background of fixed reimbursement per case is having the legally required complete documentation and full traceability of every container, as well as allocating instruments to specific patients.

## What about cost reduction?

Since the instruments and sets are regularly recorded by instacount®, precise information on frequency of use is available after just a short time. Sets that are only rarely used tie up capital and nevertheless cause handling costs – through reducing these stocks we save costs and regularly optimise our instrument stock. The system records the purchase price, calculated active life of the instruments and general handling costs, i.e. repair, reprocessing, packing, which provides us with an accurate basis for planning the repair and maintenance budget. Moreover, this software puts us in the position to plan our capa-

cities accurately and use resources sensibly, which again saves costs in the medium and long term and lightens the staff's workload considerably.

## How was the system implemented?

After each workplace had been equipped with a PC, the Aesculap specialists were able to install instacount®. Aesculap also provided accompanying training for the CSSD staff. To begin with, all the relevant data such as type of packaging, set types and sterilisation parameters were collected and imported into the system. When queries crop up today, the Aesculap specialists are at our disposal as competent consultants at all times.

## Would you decide on this same solution again?

We would undoubtedly decide in favour of instacount® again, and that applies not just for me but for all the people involved in this process. All in all, we have achieved a noticeable lightening of the staff's workload with the installation of instacount® as well as clear cost savings through the successful process optimisation project. The comprehensive documentation facility provides

proof of the high quality of the instruments and of the CSSD at all times, which also substantially simplifies time- and cost-consuming certification procedures. An instrument management software such as instacount® PLUS is really indispensable, especially working under DRG conditions.



Example: Of all the instruments on the entire base tray, only the instruments on the left tray were used during an operation. Even so, the complete base tray with all instruments has to be disinfected, packaged, maintained and sterilized at CSSD. In this way tons of instruments are processed unnecessarily.

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