



CASE STUDY

TRANSCHECK VALIDATION SERVICE

APPLIED IN PRACTICE, TRANSCHECK VALIDATION SERVICE ENSURES HIGH-LEVEL MEDICAL TRANSPORT QUALITY IN HOSPITALS.

Based on clinical studies, Swisslog TransCheck Validation Service controls the quality of medical transport via pneumatic tube systems in healthcare facilities by measuring and analyzing physical parameters within the system. The extracted data can be used for technical validation of the transport system and for quality-improvement recommendations.

On this paper we will describe several real-life cases in order to give an insight into how TransCheck Validation Service, formerly known as Qcapsule, can be applied in healthcare facilities to provide valuable solutions.

SAMPLE QUALITY TRANSPORT

The situation in a middle-sized hospital in the Netherlands was on a small scale, since it involved a system with eight stations and it was apparent from the preliminary investigation that there were quality issues within the transport of samples to the laboratory.

In order to find an approach for a solution, the complete pneumatic tube system was analyzed with TransCheck Validation Service by sending TransCheck Carriers through all the lines and comparing the data generated. As a result, it became clear that the different lines strongly differed due to the forces and jolts that occurred.

Depending on the results a minor speed reduction, one of the recommended solutions, was carried out as a first measure and this alone enabled the target to be reached: since then, further quality problems haven't been reported.

TRANSCHECK ENABLES AN EFFICIENT, COST-EFFECTIVE, AND RELIABLE VALIDATION OF PNEUMATIC TUBE SYSTEMS.

ISO ACCREDITATION

A big hospital in the Netherlands with a large 160 mm pneumatic tube system had been newly constructed. Before its grand opening, the hospital wanted to validate the tube system to ensure that there weren't any quality problems caused by the transport via PTS. The employees in charge of medical transport validation had the problem that they didn't know from which and to which station they should send samples in order to compare them with manually transported samples; due to the dimension of the system, it was impossible to send samples from all stations.

With the help of TransCheck Validation Service, a few stations could be selected to which actual patient samples were sent in order to check the deviations. As these deviations were within the quality standard of the hospital, the hospital started using the pneumatic tube throughout the hospital.

In particular, the hospital could provide the TransCheck report to the CCKL, the Dutch Foundation Assessment/Accreditation of Laboratory in Health Service. The validation of the transport quality was the first step in the targeted accreditation of the hospital laboratory towards ISO 15189.



TECHNICAL VALIDATION OF PNEUMATIC TUBE

In a newly built hospital in the Netherlands, a large pneumatic tube system had been installed for purposes of transporting all medical samples. The system had a total of more than 30 stations and various lines which meant a huge number of connections used on the way to the laboratory. How could the transport quality be controlled and how could the pneumatic tube system be validated for safe medical transport? The installer of the pneumatic tube system offered a limited-scale quality test during the handover of the installation which showed that the PTS carriers reached the destination, but couldn't test any quality-related issues.

In the old hospital, they had tested this by taking blood samples from all stations (four) and duplicates by foot to the laboratory for analysis. In the new hospital, with its 30 stations, this would involve a great deal of time and costs. In order to obtain a reliable result a minimum of 20 and a maximum of 30 samples would have to be sent per station. This means that 600 to 900 sets of samples would have to be taken. In addition, in the new hospital no analyzer was present yet and no volunteer to take extra blood, which made it organizationally very complex to validate with this common chemical validation method.

With TransCheck Validation Service the validation of the pneumatic tube system could be executed reliably and cost-effectively: during a period of three days, all pneumatic tube lines were measured with the help of TransCheck carriers in order to determine the physical parameters of the system. Two weeks later, a full report including conclusions and recommendations could be provided to the hospital. The conclusion of the report was that the pneumatic tube system would cause quality problems as a result of the combination of speed and bends. TransCheck advised a reduction of the speed to ensure a reduction of the forces.

Following the speed adjustment, the pneumatic tube system was brought into use throughout the hospital without problems. Within the scope of a chemical validation, actual patient samples were sent again to check the transport quality. Only minimum deviations were still found. Moreover, TransCheck performed a number of further measurements to determine whether the speed on all lines had been successfully reduced.

In addition, the documentation for the quality-management system was also completed by TransCheck. Thus meeting the quality requirements, it could be used without additional work to document the quality of the pneumatic tube system as necessary for the accreditation of the new medical laboratory to ISO 15189.

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