



TIMESTRIP TECHNOLOGY SUPPORTS CRITICAL PROCESSES AT THE BLOOD BANK OF THE MILITARY HOSPITAL



Military Hospital Queen Astrid at Neder-Over-Heembeek:

The Military Hospital Queen Astrid, component of Defence, has several activities in the fields of consultations, hospitalisation, expertises and scientific research. The centre of burn injuries and the blood bank are two important departments. The institution for blood transfusion gets its blood and plasma grants through the civilian staff and its active military staff. This way they cooperate actively in the treatment of patients of the burn centre and of hemato-oncologic centre of the Child Hospital Queen Fabiola and save lives of their colleagues during a foreign assignment.

Current situation:

Blood is collected and immediately cooled to $+4^{\circ}\text{C}$. After this process the blood bags are provided with identification labels and stored again in cool cells at $+4^{\circ}\text{C}$ till they are used. The same for blood plasma that is stored at -80°C , the blood plates are stored at $+22^{\circ}\text{C}$. All these thermostat controlled cells are digitally checked.

Actual problems and processes to be optimized:

Blood leaves the cool cells and is being transported in cooled boxes to an Operating Theater. From that moment on there are no further controls on temperature till the use of the blood in Operation Quarter of the hospital where they (possibly) are being warmed up.

Unused blood bags are generally returned. However the question remains how these have been kept/used, even if they are sent back in cooled boxes. Also during the labeling of the cooled blood bags or at other logistical manipulations out of the cooled cells/boxes, there is no temperature control, nor time indication of exhibition to surroundings temperatures. One never knows to judge the quality of the blood regarding to the conformable preservation or use.

Practice tests:

Therefore the Blood Transfusion Centre decided to carry out practice tests and ordered a number of TimestripPlus labels at INNOLABEL. These are analogue labels which visualize the duration of a temperature breach. In this case - blood bags- when the temperature ascends to more than 8°C .

Scenario 1.

The requested blood bags are delivered in the Operating Theater. Two blood bags are attached to the infuse holder, one of it coupled to the line, the 2nd as backup. However the second blood bag remains unused and is returned to the blood bank. At evaluation of this test, the TimestripPlus had registered a temperature breach of 6 hours. This blood bag was destroyed now, but remained in circulation before!

Scenario 2.

At the emergency department they always provide a blood bag. The blood bag comes out of the cooled cell and the nurse warms it up a bit on the heating for the well-being of the patient. At closer research the patient appears in no need of blood, so the blood bag is returned to the blood bank. By the presence of the TimestripPlus label, one observes however a temperature breach of 2 hours.

“Before the application of the TimestripPlus this remained an ignorance”, says Christian Vandenvelde. Other scenarios have been tested as well....



Bloodbags may not be frozen

“The application of another indicator label, the “Freezecheck”, is certainly an added value as well”, says Christian Vandenvelde, “this regarding to possible freezing during the preservation or the transport. If any mistake should occur and blood plates are put in the freezer instead of in the thermostat controlled cells, thanks to the INNOLABEL and so the Freezecheck there is a clear indication that these blood plates have been frozen and impossible to use!

Further actions, results and conclusions:

“Thanks to the TimestripPlus we noticed that there was already a restricted temperature breach during the ID- labeling of the blood bags” says France T’Sas. “ It is a fact that blood bags warm up more quickly than cool down, this was a very important observation in the complete process. Because of this we have adapted and accelerated our process, until there was no temperature breach. The TimestripPlus labels are very user- friendly, very precise and easily readable for everyone without additional explanation”!

“By introducing the Freezecheck and the TimestripPlus we can state that we have an uninterrupted control on the temperature of our blood bags. This allows us to be 100% certain of the condition of the blood bag if returned... Also possible human mistakes are discovered and vital errors avoided”, says Christian Vandenvelde.

“According to the satisfactory result, we will apply these labels for other temperature ranges and on the blood plates and - plasma, also here a permanent temperature control is an absolute must. The cost of a TimestripPlus and Freezecheck can be neglected in proportion to the value of a blood bag. Blood is a too precious product , any means that optimize and secure our process should be used, it saves human lives”! , concludes Christian Vandenvelde.

The **EASIEST** Blood Temp Indicator

