

BACKGROUND: Blood component administration represents a critical phase of the transfusion process due to the possible occurrence of errors during the different steps leading to the identification of the patient and the infusion of the product. The probability of the error can be reduced by the implementation of validated information systems. We tested the SCWeb System at the bedside in a transfusion outpatient clinic.

METODI: The SCWeb System is designed to assist and to control the process step by step using electronic devices to ensure traceability and documentation and to increase safety: it is based on IT monitored checklists which assist the personnel to follow the procedure, according to best practices; the system must initially be activated by the operator which is recognized by an auto-signing system based on Bluetooth Low Energy (BLE) which avoids the operator having to identify himself/herself beforehand. Appropriate privacy protection is provided. thereafter it takes up the task to give instructions to the operators and to verify the adherence to the procedure, by asking an active confirmation of the proper fulfilment of the activity; a continuous registration and documentation of the steps is also made by the system.

Standards and specifications for each step of the administration procedure have been configured on SCWeb System to track in detail every phase of the process: operator and patient identification, presence of informed consent to transfusion, blood pressure, pulse and temperature recording, vein access, identification and control of the blood unit, beginning of the transfusion. Steps requiring nurse and doctor direct involvement must be actively confirmed on the device by both operators and the system allows to proceed only after this active confirmation. An alarm has been set at 15 minutes after beginning the transfusion, to ensure a control of the patient's status. For each step, an active confirmation of the action is required. The system has been tested at the bedside on 30 patients admitted to the outpatient clinic for the transfusion of 45 red cell concentrates, also recording the compliance of the personnel and the organizational impact. Abbiamo verificato l'impatto sull'organizzazione interna e la compliance da parte degli operatori.

RESULTS: The System has been put in place after a very short training, a paperless and timely available registration in electronic format of all the operator's action in every single phase of the transfusion process and the way in which it is performed. When prescribed, confirmation of the checklist was only possible in the presence and with the active confirmation of two operators (doctor and nurse) otherwise it is not allowed to proceed with the transfusion.

CONCLUSIONS: Ease of SCWeb® system allows its implementation without negative impact on organization of transfusion outpatient clinic and without difficulties by operators (nurses and doctors), who appreciated the help given by the IT check system. The registration of the electronic check list offers a reliable tool for the traceability of the transfusion procedure, also granting the documentation of the entire process. The verification of the transfusion check list by two different operators at the bedside contributes to the reduction of transfusion risk and errors. The system can be utilized as a barrier against the mismatch of transfusion (preventive measure), as a traceability and documentation measure and as a tool for training of personnel; of noticeable interest is the fact that it avoids any need of paper registration of the step in transfusion process, due to the timely registration of the activity by personnel, recognized by the system thanks to the Bluetooth Low Energy (BLE) auto-signing device. In the future, the system will be connected to the transfusion data management system, to monitor all the process from the release from the blood establishment to the communication of the end of the transfusion.