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TO: Medical Staff, House Staff, Patient Care Centers,
and Outpatient Clinics

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RE: Pathogen reduced platelets

The FDA is requiring transfusion services to implement additional safety measures to prevent septic transfusion reactions related to platelet transfusion by February 2021. <https://www.fda.gov/media/123448/download>

One way to comply with this guidance and reduce septic platelet transfusion risk is pathogen reduction (PR), using psoralens and UV irradiation.

Unlike other bacterial contamination risk reduction strategies, PR reduces infectious risk from viruses and protozoa as well as bacteria, and also eliminates the need for gamma irradiation. PR is a proactive method that can reduce risks of transfusion-associated infections before an emerging infectious agent has even been identified

PR platelets have slightly lower corrected count increments than non-PR platelets, and slightly shorter interval to repeat platelet transfusion.

The UCM Blood Bank is planning a phased roll-out of PR platelets, starting Monday June 29th. At that time, we will have a mixed inventory of PR platelets and standard plateletpheresis units. After 2/2021, we anticipate having a majority PR inventory, with a smaller amount of plateletpheresis units that meet the FDA requirement by using other bacterial detection techniques, such as second culture.

Given that the greatest risk of bacterially contaminated platelet units is borne by neutropenic hematology-oncology patients as well as neonates, we will preferentially issue PR platelets to Comer, CCD 10th floor, and IVTH while we have a mixed inventory. Patients in other units will be issued PR platelets interchangeably with standard plateletpheresis units.

PR platelets do not require irradiation to prevent transfusion-associated graft-versus-host disease (TA-GvHD). The PR platelet label will not state “irradiated”, but rather “psoralen treated”:



The only contraindications to PR platelets are

- history of hypersensitivity reaction to amotosalen or other psoralens.
- neonatal patients treated with phototherapy devices that emit a peak energy wavelength less than 425 nm, or have a lower bound of the emission bandwidth <375 nm, due to the potential for erythema resulting from interaction between ultraviolet light and amotosalen.
 - However, recent studies have not shown toxicity or adverse events specifically related to amotosalen/UVA PR in pediatric patients (reviewed in Gehrie et al).

References

- Bahar B, Schulz WL, Gokhale A, Spencer BR, Gehrie EA, Snyder EL. Blood utilisation and transfusion reactions in adult patients transfused with conventional or pathogen-reduced platelets. *Br J Haematol.* 2020;188(3):465-472.
- Estcourt LJ, Malouf R, Hopewell S, et al. Pathogen-reduced platelets for the prevention of bleeding. *Cochrane Database Syst Rev.* 2017;7(7):CD009072.
- Gehrie EA, Rutter SJ, Snyder EL. Pathogen Reduction: The State of the Science in 2019. *Hematol Oncol Clin North Am.* 2019;33(5):749-766.
- Lanteri MC, Santa-Maria F, Laughunn A, et al. Inactivation of a broad spectrum of viruses and parasites by photochemical treatment of plasma and platelets using amotosalen and ultraviolet A light. *Transfusion.* 2020;60(6):1319-1331.

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