

# Universal Leucodepletion- A Real Time Experience

rema menon

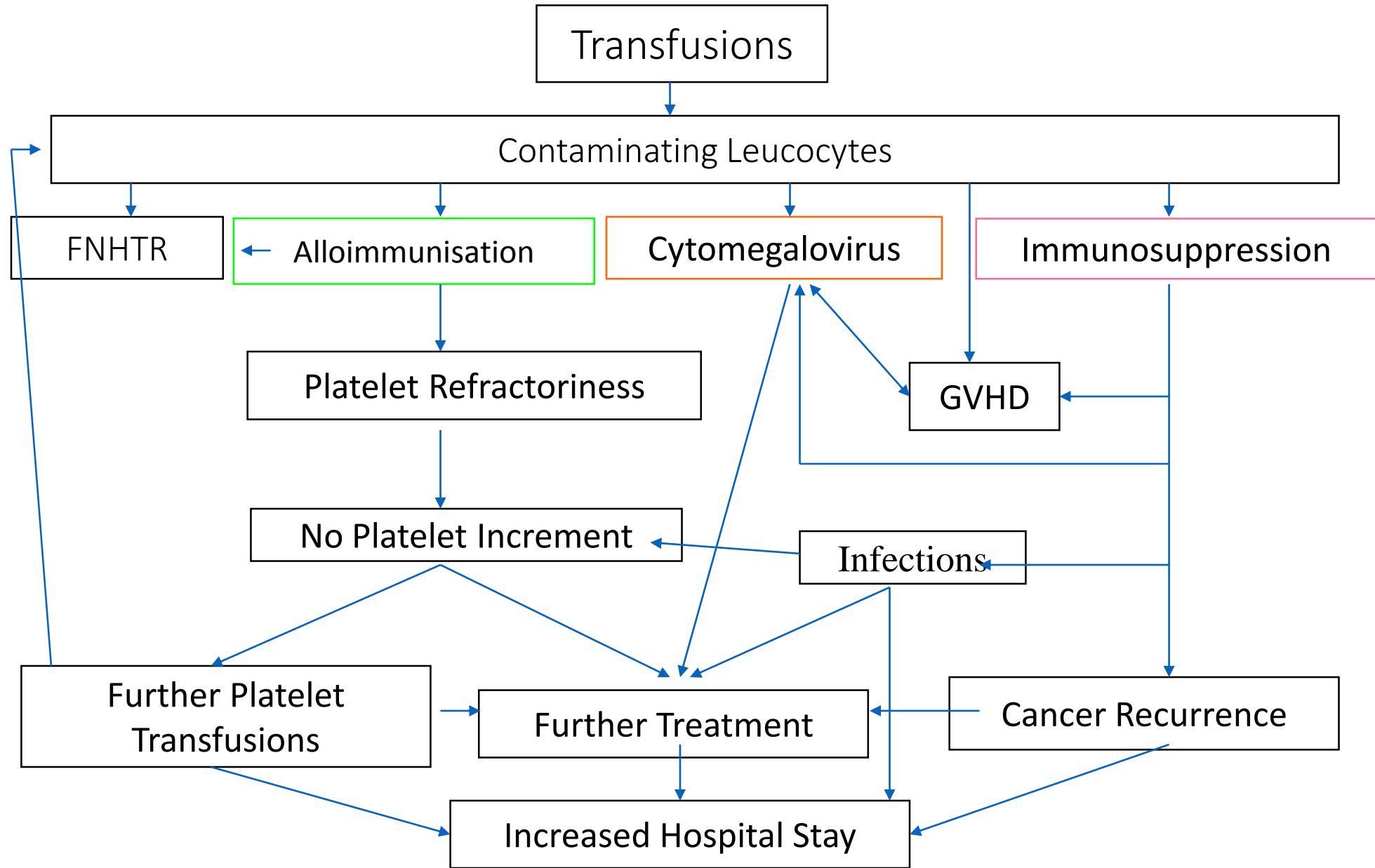
Transfusion Services

Apollo Hospitals, Chennai

# Leucocytes

- 🔴 Leucocytes in units of non-WBC reduced blood products do not contribute to product efficacy but are regarded as contaminants that potentially reduce transfusion safety.

# Clinical effects of leucocytes

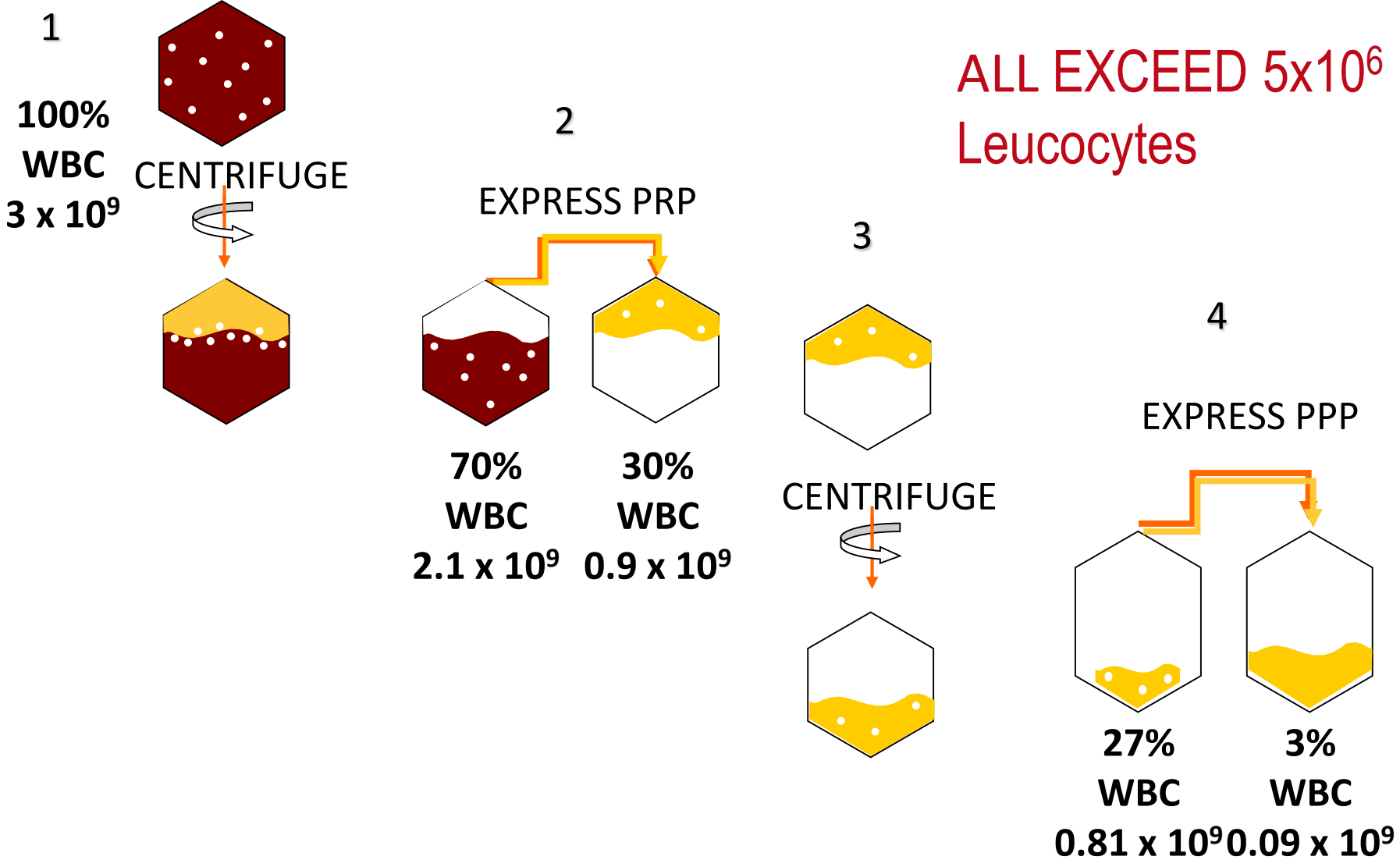


# Blood Transfusion Reactions

## Incidence of Transfusion Reactions (U.S.)

- Type of Reaction Relative risk
- Allergic 1:500
- Febrile (non Hemolytic) 1:1000 to 1:10,000
- TRALI 1:5000 to 1:100,000
- Hemolytic, fatal 1:250,000 to 1:600,000

# Leucocyte Distribution in Blood Component Production



Randomized trial comparing Packed red cell  
blood transfusion  
With and without leucocyte depletion  
For gastrointestinal surgery

*"the most significant determinant of hospital stay was infection ( $P < 0.0001$ )."*

*"the most significant factor related to hospital charges was length of stay  
( $P < 0.0001$ )."*

*"Shorter hospital stays of patients receiving leucocyte depleted blood  
resulted in significant reductions in hospital costs, more than offsetting  
the added expense of leucocyte depletion."*

# Blood Transfusion Related Immunomodulation: The silent epidemic

*“The data supporting the use of leucocyte reduction in surgical patients to reduce morbidity after transfusion are considerably stronger than those supporting smoking cessation for reduction in risk of heart disease or lung cancer.”*

*“We believe it is now reasonable to consider universal leucocyte reduction of transfusions for surgical patients as a means of reducing the toxicity of this powerful and important therapy.”*

# Trial to Reduce Alloimmunization to Platelets (TRAP)

Population: Patients with newly diagnosed AML studied during remission induction therapy

Study groups:

- 1) Pooled platelets from whole blood (control)
- 2) Pooled platelets – Leucoreduced by filtration
- 3) Pooled platelets – with UVB irradiation
- 4) Single donor (apheresis) platelets – Leucoreduced

All red cell units were Leucoreduced



# Trial to Reduce Alloimmunization to Platelets

## Summary of results:

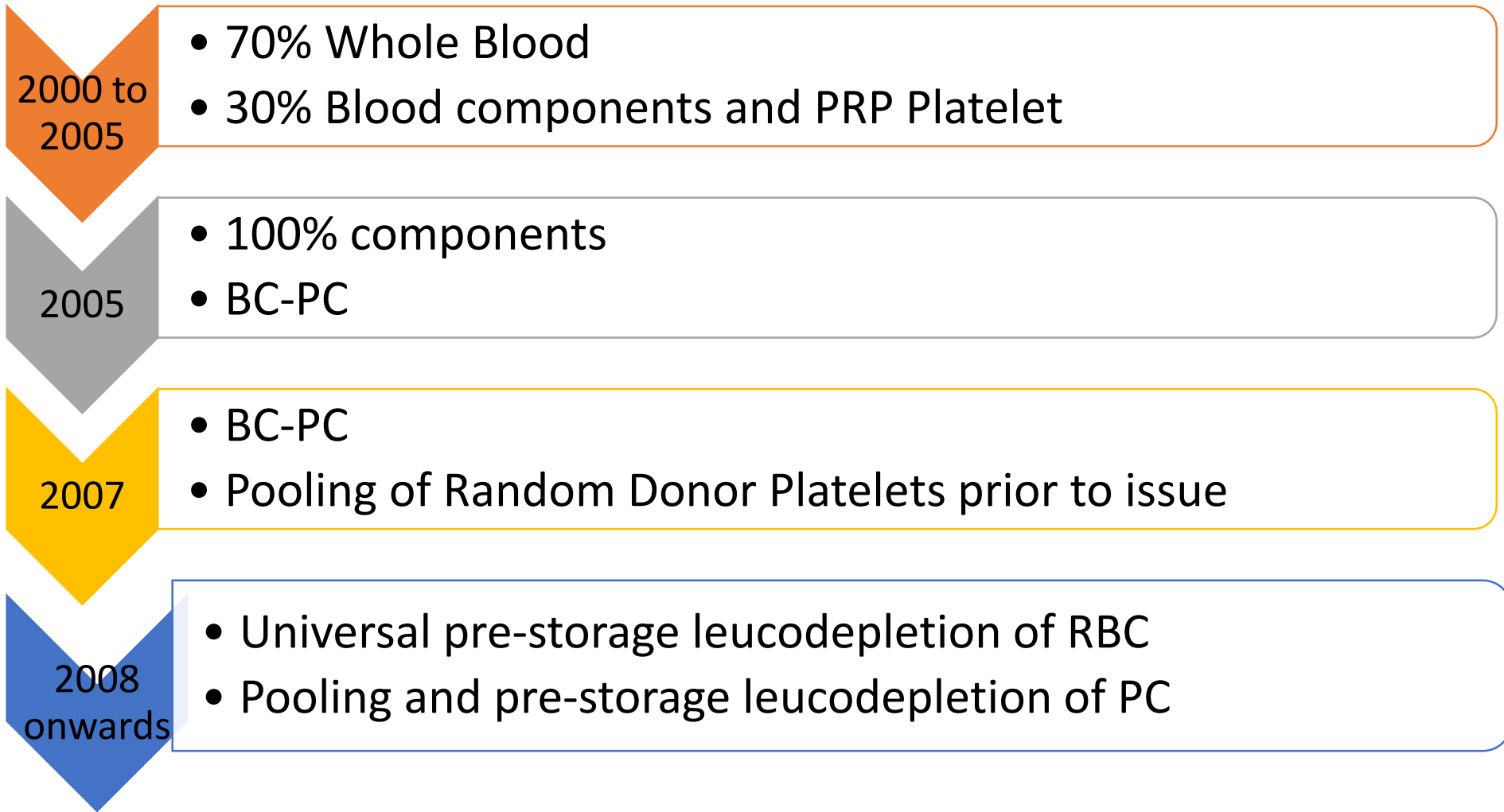
- All treatment groups had significantly less HLA alloimmunization and refractoriness than the control group
- No differences between study groups
- Low incidence of bleeding (0-1%) in all groups
- Filtered components recommended for AML patients

# Apollo Blood Services, Chennai

Supports 7 Apollo hospitals & 14 others in Chennai.

- >25,000 walk-in donors annually
- 100% component preparation
- TTI screening includes NAT
- Excess plasma provided for fractionation

# Evolution of Pooled PC @ Apollo Hospitals, Chennai



# Conclusion

- Leucoreduced RBCs has made RBC transfusion more comfortable
- Pools of WB-PC were as therapeutically effective as SDP.
- Pooled Leucodepleted PC has reduced the cost of platelet therapy
- Dependence on aphaeresis donors has reduced
- Pooled Leucodepleted PC can replace aphaeresis in most non-oncological clinical situations.
- It is a logical strategy for optimal use of whole blood donations in the blood banks .