March 16, 2013

Secretary of the Expert Committee on the Selection and Use of Essential Medicines
World Health Organization
Office of the EML Secretariat
Medicine Access and Rational Use (MAR)
Department of Essential Medicines and Health Products
20 Avenue Appia CH-1211 Geneva 27
Re: Application for the addition of Whole Blood and Red Blood Cells to the WHO Model Essential Medicines List and the WHO Model Essential Medicines List for children

Dear Sir:

I read with great interest the debate on whether Whole Blood and Red Blood Cells should be classified as an essential medicine. I am writing to add my voice to the discussion and to specifically respond to Expert 2 Reviewer recommendation to postpone the decision to allow more time to identify additional clinical evidence. I disagree with this recommendation because additional high quality clinical evidence will not be available in the next two years or perhaps ever. I will explain.

I have devoted much of my research career to understanding when red blood cell transfusion should be administered to patients. We have demonstrated that severe anemia is associated with high death rates in patients who decline transfusion especially in those with underlying cardiovascular disease.\textsuperscript{1} We have performed clinical trials evaluating transfusion thresholds.\textsuperscript{2} We have performed systematic reviews of transfusion thresholds.\textsuperscript{3,4} We have published evidence-based guidelines on transfusion thresholds endorsed by a major organization.\textsuperscript{5} We have explained why only clinical trials will provide high quality evidence on when to administer transfusion.\textsuperscript{6,7}

Expert Reviewer No 2 has written a thoughtful commentary but unfortunately has recommended postponing the decision until additional clinical evidence is available. The problem is that high quality clinical trial evidence may never be available to document the efficacy of red blood cell transfusion. I do not think there is a controversy whether red blood cell transfusion is life saving or that red blood cells is an essential medicine. I doubt there are many clinicians anywhere in the world that would not transfuse a patient, for example, with hemoglobin of 3 g/dL or in hemorrhagic shock. The only question is what level of hemoglobin (or other clinical indication) are the benefits of transfusion outweighed by the uncommon adverse effects of blood transfusion. To answer that question, we would need to perform a randomized clinical trial comparing patients transfused at low threshold versus a higher threshold. For example, we might compare 5
g/dL threshold versus a 7 g/dL threshold. If the trial showed superiority of the 7 g/dL threshold group then this would provide the missing evidence documenting the efficacy of red blood cell transfusion and prove that 5 g/dL threshold is too low. However, the conduct of such a trial would be exceedingly difficult and could take many years, if it is ever performed. Thus, the net result would be to delay the availability of what must be considered, an essential medicine, red blood cell transfusion to some patients for many years. In my opinion that would be morally unacceptable even in the unlikely event that blood is commercialized and sold for profit.

Sincerely,

[Signature]

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Literature Cited