WHO Cryoprecipitates Research Report: Contributions and Recommendations from the Shanghai Blood Center, China

World Health Organization (WHO) distributed questionnaires to 194 member countries in 2024 to investigate information on cryoprecipitates. And form an international investigation report of an international survey on the availability and clinical use of cryoprecipitates. After in-depth research and analysis of the results of the cryoprecipitates investigation, the 2023 WHO Essential Medicines List, and related materials, we propose the following suggestions:

ID No	Items	suggestions
A.12	Emicizumab	As a critical therapeutic agent for hemophilia A, emicizumab has demonstrated favorable efficacy and cost-effectiveness. It is recommended to include it in the WHO Essential Medicines Core List to enhance treatment accessibility for hemophilia A patients globally. To ensure its rational use, corresponding clinical guidelines and protocols should be developed to provide clear medication recommendations tailored to different patient conditions. For instance, distinct dosage regimens and monitoring parameters should be established for hemophilia A patients with inhibitors versus those without inhibitors.
A.23	Recombinant Coagulation Factor	Recombinant coagulation factors VIII and IX play a vital role in treating hemophilia, with some products already widely used in clinical practice. It is recommended to further advance their global accessibility, particularly in low- and middle-income countries (LMICs). This can be achieved through collaborations with national health authorities to implement training programs aimed at enhancing healthcare professionals' understanding and competency in using these medications. Concurrently, patient education should be strengthened to improve adherence to standardized treatment protocols. Additionally, ongoing monitoring of drug safety and efficacy is essential, alongside encouraging research to optimize treatment regimens.
C.1	Cryoprecipitate	According to the survey findings, both high-income countries (HICs) and low- and middle-income countries (LMICs) continue to produce and use non-pathogen-inactivated cryoprecipitate. Considering the risk of pathogen transmission, it is recommended that countries gradually increase the production and utilization of pathogen-reduced cryoprecipitate (Cryo-PR) where resources permit. For LMICs, capacity-building in

		Cryo-PR production should be enhanced through technical assistance and international cooperation, such as supporting the establishment of standardized production facilities and providing technical training. Meanwhile, in regions still using non-pathogen-inactivated cryoprecipitate, rigorous blood screening protocols must be strictly enforced to ensure blood safety and minimize infection risks.
	Clotting Factor Products	Surveys indicate significant disparities in the accessibility of clotting factor products and recombinant analogs between HICs and LMICs. To improve this situation, it is recommended to strengthen the coordination and optimization of the global supply chain. For LMICs, on the one hand, international organizations and HICs can increase the supply of coagulation factor products in these regions through donations, preferential policies, etc. On the other hand, LMICs are encouraged to develop their own plasma fractionation industries to enhance product self-sufficiency. Furthermore, a reasonable procurement mechanism needs to be established to reduce product costs and improve accessibility. For example, international joint procurement and negotiating pricing with pharmaceutical companies can be employed to alleviate the financial burden on patients.
	Data Monitoring and Research	To comprehensively evaluate the efficacy and safety of various blood products, it is recommended to establish a globally standardized data monitoring system to collect data on blood product utilization and adverse reactions across countries. Analysis of these data will enable prompt identification of issues and facilitate adjustments to policies and treatment protocols. Additionally, enhanced support for research on blood products is crucial. This includes promoting multicenter, large-scale clinical trials to investigate the therapeutic outcomes, safety profiles, and cost-effectiveness of different products. Such evidence will strengthen the foundation for clinical decision-making and policy formulation.

The above recommendations are provided for reference purposes only. We hope they offer valuable insights to support your decision-making process.

Signature: 

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