MINISTRY OF HEALTH
REPUBLIC OF INDONESIA





DONOR RECRUITMENT AND PLASMA COLLECTION IN INDONESIA



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OUTLINE

- Introduction
- Challenges to Fulfill Global Demand of Plasma for Fractionation
- Global Efforts to Fulfill Plasma for Fractionation
- The need of PDMPs in Indonesia
- Difficulty on Plasma Fractionation in Indonesia
- Regulation on Donor Recruitment and Blood/Plasma Collection in Indonesia
- Current Progress on Plasma Fractionation in Indonesia
- Conclusion

INTRODUCTION

- Blood products are considered as essential part of medical therapy that administered through transfusion or injected
- Donor recruitment from low risk group and careful selection play key roles in obtaining safe blood products
- Un-used plasma for transfusion and intended plasma for fractionation is a precious biological resource as a raw material for production of Plasma Derived Medicinal Products
- However ethical, safety and scientific issues are important to be considered during plasma collection

INCREASING DEMAND OF PDMPS



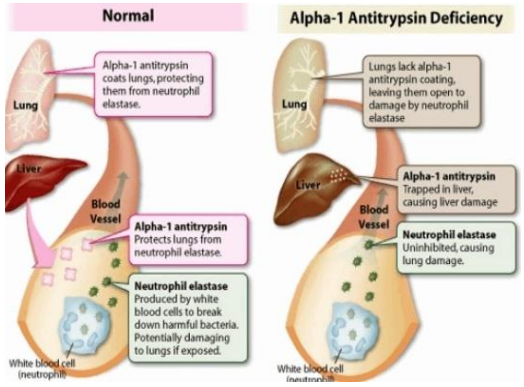
WFH: only ± 25% of people with Haemophilia receive adequate treatment globally.
AOB, Weinstein, Jan 2018



The IPOPI: at least 70% of individuals with PID lack of access to Ig products.
AOB, Weinstein, Jan 2018



Hundred thousands of hypoalbumin patients due to chronic inflamatatory diseases (ec. liver/renal failure due to hypertension, DM, infection, etc) lack of access to Albumin products



Only 3,000 among 120,000 individuals with congenital alpha-1 antitrypsin deficiency throughout Europe receive treatment with alpha-1 antitrypsin. IBPN, Vol 35, Issue 7, February 2018



Hundred thousands of HDNB die or have brain damage due lack of access to anti-D Hyper Ig
AOB, Weinstein, Jan 2018

CHALLENGES TO FULFILL GLOBAL DEMAND OF PLASMA FOR FRACTIONATION

DEVELOPED COUNTRIES

Volume of Recovered Plasma was decreased, due to:

- Improvement of blood management
- Changes in surgical procedures
- Improvement of disease diagnosis and treatment

Only 13% (2015) worldwide & 10% (2013) in US that the rPlasma were accounted for fractionation

DEVELOPING COUNTRIES

Volume of Recovered Plasma was increased from 2008 to 2013 by 10.7 Million in 159 countries (75% in SEA) , due to:

- Improvement of people awareness on blood donation
- Increase effort of BE, eq through Mobile Unit activities

Most of rPlasma was discarded due to lack of: national blood program, QC system, adequate screening test, control of storage condition

Annals of Blood, Weinstein, Jan 2018

GLOBAL EFFORTS TO FULFILL PLASMA FOR FRACTIONATION



Increase plasma collection





WHO, CoE, IPFA preference solely on VNRD

FDA justification on compensated Plasmapheresis donors

SHOULD HAVE SAME STANDARD OF SAFETY

PLUS CONCENSUS CONFERENCE DUBLIN, IRELAND rPlasma from developing countries should not be used For fractionation Generally due to Substandard Quality

(IPBN vol 35 issue 7, Feb 2018:



Improve Quality of Plasma





Annals of Blood, Weinstein, Jan 2018

THE NEEDS of PDMPs in INDONESIA (1)

THE PLASMA PROTEINS MARKET IN INDONESIA - 2012

THE PLASMA PROTEINS MARKET IN INDONESIA

BY PRODUCT

	2003			2006			2009			2012			CHANGE
	RUPIAHS (MILL)	US $ (MM)	MARKET SHARE	RUPIAHS (MILL)	US $ (MM)	MARKET SHARE	RUPIAHS (MILL)	US $ (MM)	MARKET SHARE	RUPIAHS (MILL)	US $ (MM)	MARKET SHARE	'12/'09 %
IMMUNE GLOBULIN (IMIG)	-	-	-	-	-	-	-	-	-	-	-	-	-
IGIV	7.342	0.798	12%	16.799	1.868	9%	29.610	2.884	14%	27.093	2.880	8%	0%
HYPERIMMUNE GLOBULIN	2.824	0.307	5%	3.211	0.357	2%	6.766	0.659	3%	28.627	3.043	9%	362%
TETANUS	1.104	0.120	2%	1.133	0.126	1%	1.694	0.165	1%	19.755	2.100	6%	1173%
HEPATITIS B	1.720	0.187	3%	2.077	0.231	1%	5.072	0.494	2%	8.871	0.943	3%	91%
RABIES	-	-	-	-	-	-	-	-	-	-	-	-	-
RHOD	-	-	-	-	-	-	-	-	-	-	-	-	-
ALBUMIN/PPF	45.264	4.920	72%	150.885	16.778	79%	146.274	14.247	69%	235.917	25.078	71%	76%
FACTOR VIII	2.337	0.254	4%	18.885	2.100	10%	29.569	2.880	14%	35.268	3.749	11%	30%
Recombinant factors	-	-	-	-	-	-	6.930	0.675	-	6.350	0.675	-	0%
FACTOR IX	-	-	-	-	-	-	-	-	-	3.547	0.377	1%	-
ANTITHROMBIN	3.643	0.396	6%	0.899	0.100	0%	-	-	-	-	-	-	-
FIBRIN GLUE	1.316	0.143	2%	0.612	0.068	0%	0.893	0.087	0%	1.364	0.145	0%	67%
ALL OTHERS	-	-	-	-	-	-	-	-	-	0.630	0.067	0%	-
TOTAL MARKET	62.726	6.818	101%	191.290	21.271	100%	213.112	20.757	100%	332.445	35.339	100%	70%
TOTAL MARKET WITH rFACTORS	-	-	-	-	-	-	220.042	21.432		338.795	36.014		68%
Exchange Rate US$/Rupiah		9,200			8,993			10,267			9,407.3		

2015 (**)

IVIG 70 Kg ~ Rp. 13,3 Billion

Albumin 9,000 Kg ~ Rp. 540 Billion

F VIII 40 Million IU~ Rp. 240 Billion

Total (3 Products) Rp. 793,3 Billion

Increase 58%

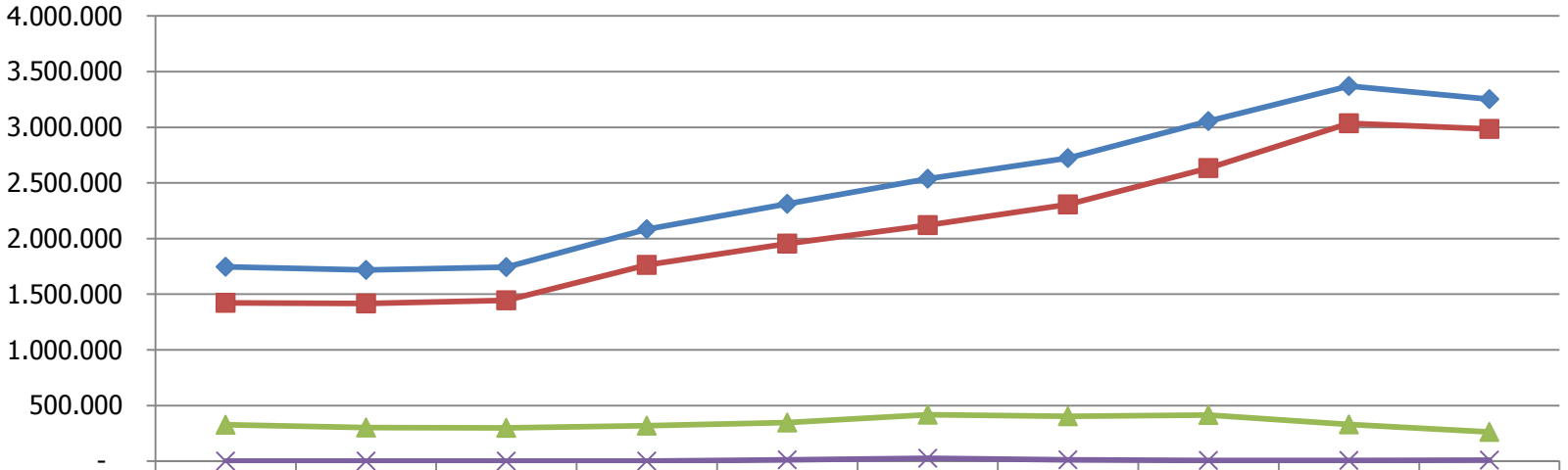
There were a lot of undiagnozed and under reported patients.

(*) Data from the Marketting Research Bureau, Inc, US, December 2013

(**) Data from the Preliminary report of The Marketing Research Bureau-US, 2015

DIFFICULTY ON SELF SUFFICIENCY OF PDMPs FOR INDONESIA (1)

Inadequate and need of improvement of plasma



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total Donasi	1.746.591	1.718.478	1.742.151	2.083.583	2.310.721	2.538.314	2.722.758	3.054.747	3.370.935	3.252.077
Donasi Sukarela	1.420.911	1.416.374	1.444.398	1.764.287	1.954.600	2.121.744	2.306.707	2.633.344	3.034.904	2.983.534
Donasi Keluarga	325.680	302.104	297.753	318.789	345.874	416.447	403.470	414.333	330.913	261.087
Donasi Bayaran				507	10.547	25.089	12.581	7.070	5.118	7.456

- On average 60% of donation comes from mobile unit collection (40% New Donor)
- In 2015: 2,552,300 of blood donors result in 3,252,077 unit of whole blood → donation frequent 2.1/blood donor/year
- Only 60% of donation has been processed into blood component
- 85% of donation tested by EIA/Chlia Method on TTIs

DIFFICULTY ON SELF SUFFICIENCY OF PDMPs FOR INDONESIA

Inadequate volume and not standardized quality of plasma





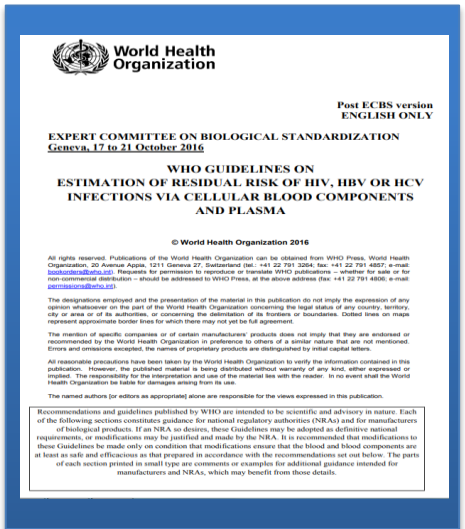
There is currently no established Plasma Center, because:

- Difficulty in recruiting plasma donors due to low awareness of plasmapheresis donation among population
- Need high investment

- Currently only 2 Blood Centre has GMP Certified from the NADFC-Indonesia (Jakarta & Surabaya BC)
- Only Jakarta BC has implemented NAT on 100% donation

HIGH RISK OF HBV INFECTION IN BLOOD DONORS

- Indonesia has been classified into medium to high endemic of Hepatitis B (prevalence of Hepatitis among general population: 7,2% (National Research on basic health care, 2013)
- HBV vaccination started in 1992, while most blood donors are in the age group of 18-44 year



World Health Organization

Post ECBS version
ENGLISH ONLY

EXPERT COMMITTEE ON BIOLOGICAL STANDARDIZATION
Geneva, 17 to 21 October 2016

WHO GUIDELINES ON
ESTIMATION OF RESIDUAL RISK OF HIV, HBV OR HCV
INFECTIONS VIA CELLULAR BLOOD COMPONENTS
AND PLASMA

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Recommendations and guidelines published by WHO are intended to be scientific and advisory in nature. Each of the following sections constitutes guidance for national regulatory authorities (NRAs) and for manufacturers of biological products. If an NRA so desires, these Guidelines may be adopted as definitive national requirements, or modifications may be justified and made by the NRA. It is recommended that modifications to these Guidelines be made only on condition that modifications ensure that the blood and blood components are at least as safe and efficacious as that prepared in accordance with the recommendations set out below. The parts of each section printed in small type are comments or examples for additional guidance intended for manufacturers and NRAs, which may benefit from those details.

WHO Guidelines on Estimation of RR of HIV, HBV or HCV Infections via cellular blood components and plasma, 2016

HIGH RISK OF HBV INFECTION IN BLOOD DONORS

- The Estimation of RR for HBV infection in donations from repeat donors (with HBV Incidence adjustment factor) at Jakarta BC (100% NAT tested)
  - 24,9 per 100.000 donations
- China 1:10,555(NAT), South Africa 1:36,612; Brazil 1:10.700 (Kupek, ISRN Infectious Dis, Vol 2013 (2013)
- Strategy to improve blood safety:
  - Improve donor retention program, decrease recruiting high risk new donors, select HBV vaccinated donors
  - Multiple viral inactivation
  - Anti-HBc and Anti-HBs testing (?)

KEMENTERIAN KESEHATAN REPUBLIK INDONESIA

REGULATION ON BLOOD SERVICES IN INDONESIA





Government Regulation No. 7/2011 on Blood Services

Ministry of Health Decree No. 83/2014 on Blood Centres, Hospital Blood Bank Management

Ministry of Health Decree No. 91/2015 on National Standard For Blood Services

NADFC 2017: GMP Guideline for Blood Establishment and Plasma Center



2018: Ministry of Health Decree on Plasma Fractionation (revision)

Addopting WHO & PICs GMP for BE Guideline

MINISTRY OF HEALTH DECREE ON PLASMA FRACTIONATION (REVISION)

Purpose:
Specifically to regulate the industrial aspect of plasma fractionation



Donor Recruitment & Selection

- Follow the National Standard
- VNRD & Possibility of Plasma Donors with Compensation



Plasma Collection

- Recovered Plasma and concurrent plasmaaphaeresis by Blood Center
- Plasma source by Plasma Center



Plasma Processing

- Follow the National Standard
- Serology & NAT for TTIs

MINISTRY OF HEALTH DECREE ON PLASMA FRACTIONATION (REVISION)

- Important points:
  - Plasma fractionation is run by the State-owned Pharmaceutical Company that has experience in producing biological products and fulfill requirement
    - Toll-fractionation is allowed as part of establishing la ocal fractionation plant
  - Plasma Center is run by the State-owned Pharmaceutical Company that has been approved to run plasma fractionation
  - Plasmaaphaeresis donors may get compensation (not in cash money, but solely aimed at improving donor's health)

MINISTRY OF HEALTH DECREE ON PLASMA FRACTIONATION (REVISION)

- Important points:
  - Plasmaaphaeresis donor should have experience of donating whole blood at least 3 times
  - Plasmaaphaeresis donation is once every two weeks and maximum 33 x/year, and will be rejected if the plasma protein below the normal level
  - Plasma master file should be ensured
  - Foreign Fractionator should fulfill the national requirement (has an experience in technology transfer) and approved by the government

CURRENT PROGRESS ON PLASMA FRACTIONATION IN INDONESIA

The State-owned Pharmaceutical Company

- has been identified and waiting for government approval
- Feasibility study has been established
- Still looking for appropriate investors
- Is building collaboration with Blood Centers

Blood Establishment GMP Certification

- 2 BC has been certified
- 3 BCs are approaching the GMP Certification from the NADFC in 2018

CONCLUSION

- The need of PDMPs is increasing including in Indonesia
- Fulfilling the adequate and qualified plasma for fractionation either through toll or local fractionation is a big challenge for Indonesia with high endemic of HBV infection
- Plasma Center has strictker requirement in providing qualified plasma for fractionation
- GMP certification is one way to improve quality of blood services either for transfusion and fractionation


THANK YOU