

Session 2 (March 6, 2019)  
MEETING PATIENT NEEDS

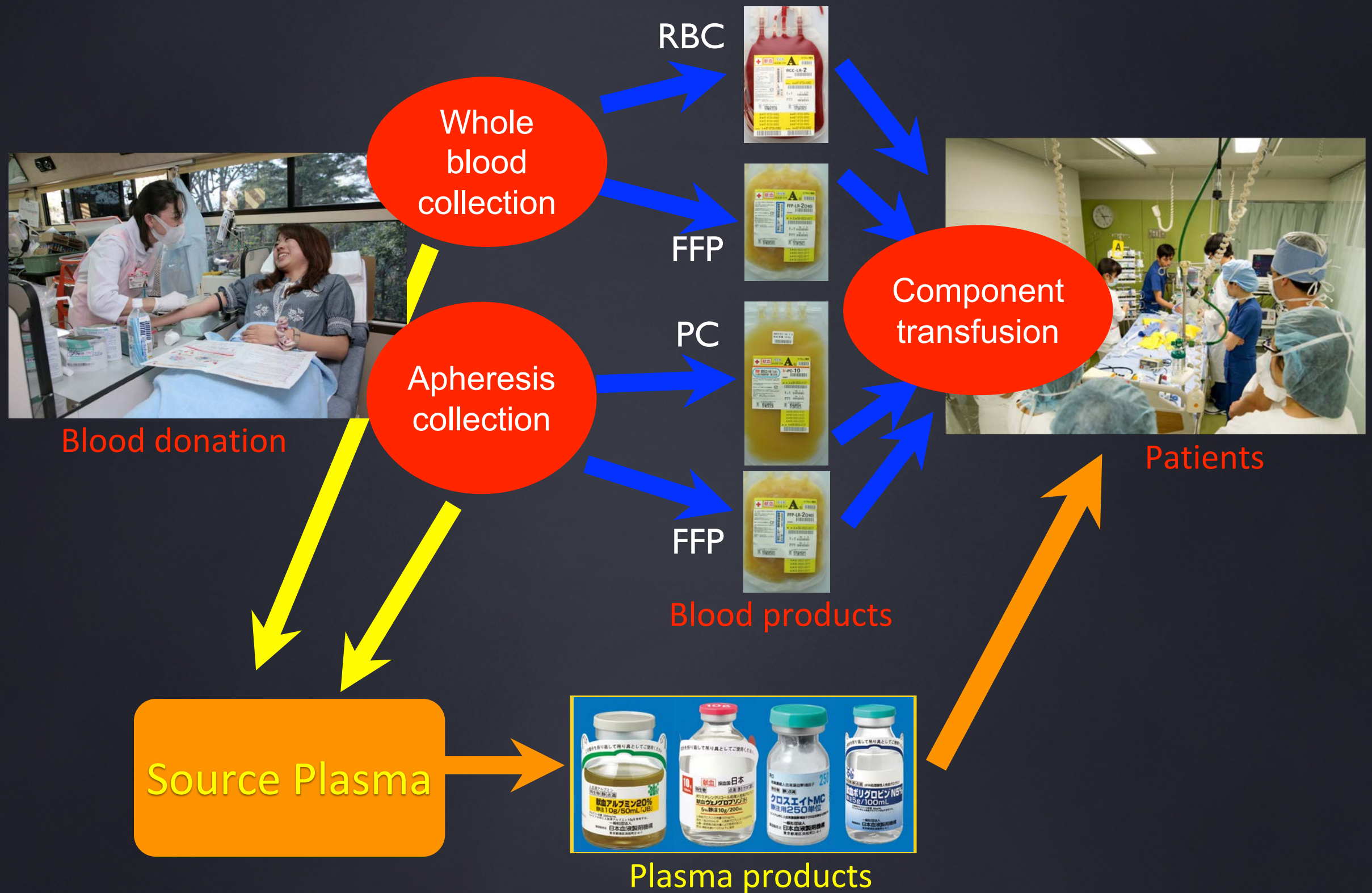
# Appropriate use of Albumin in Japan

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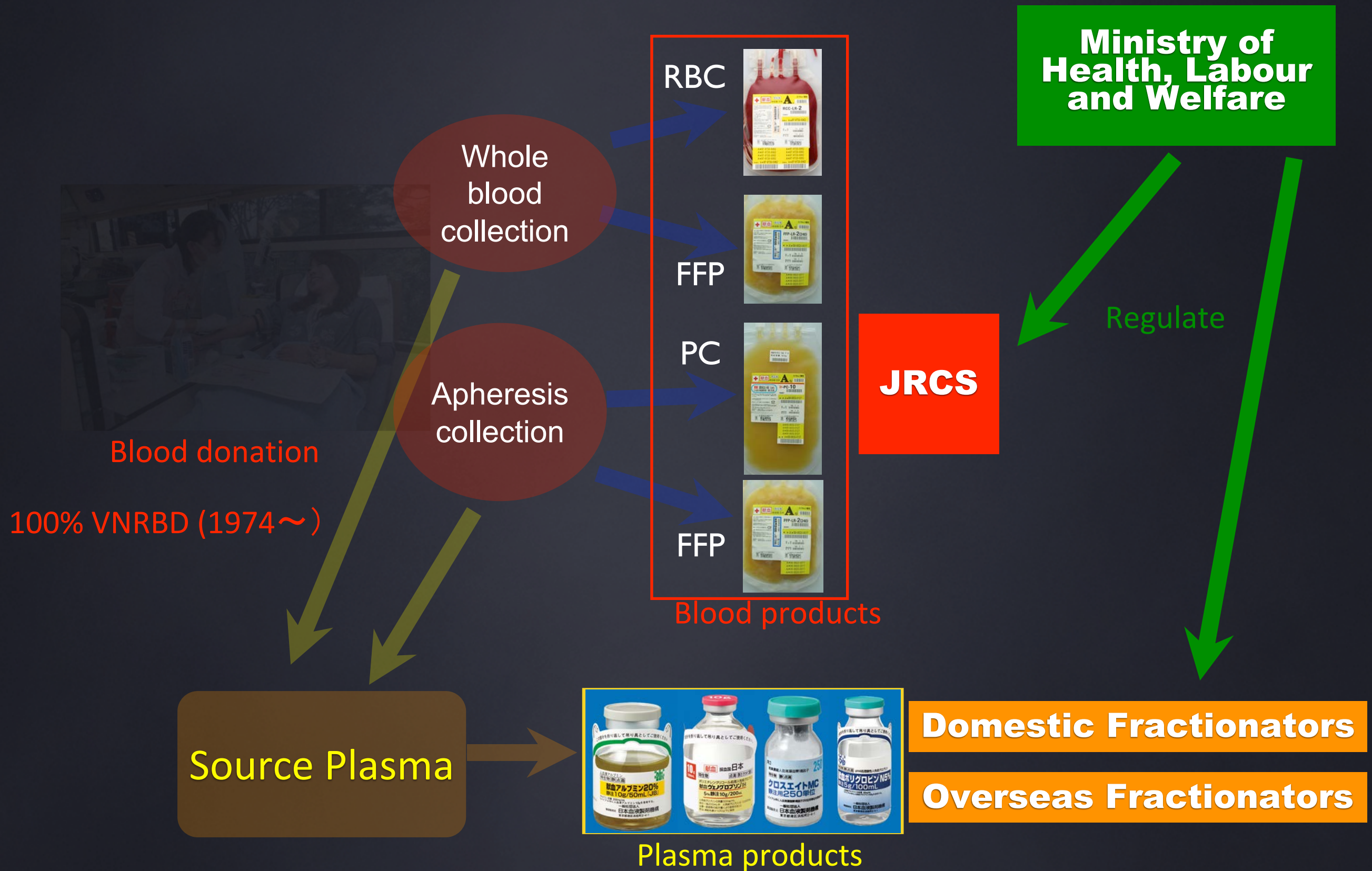
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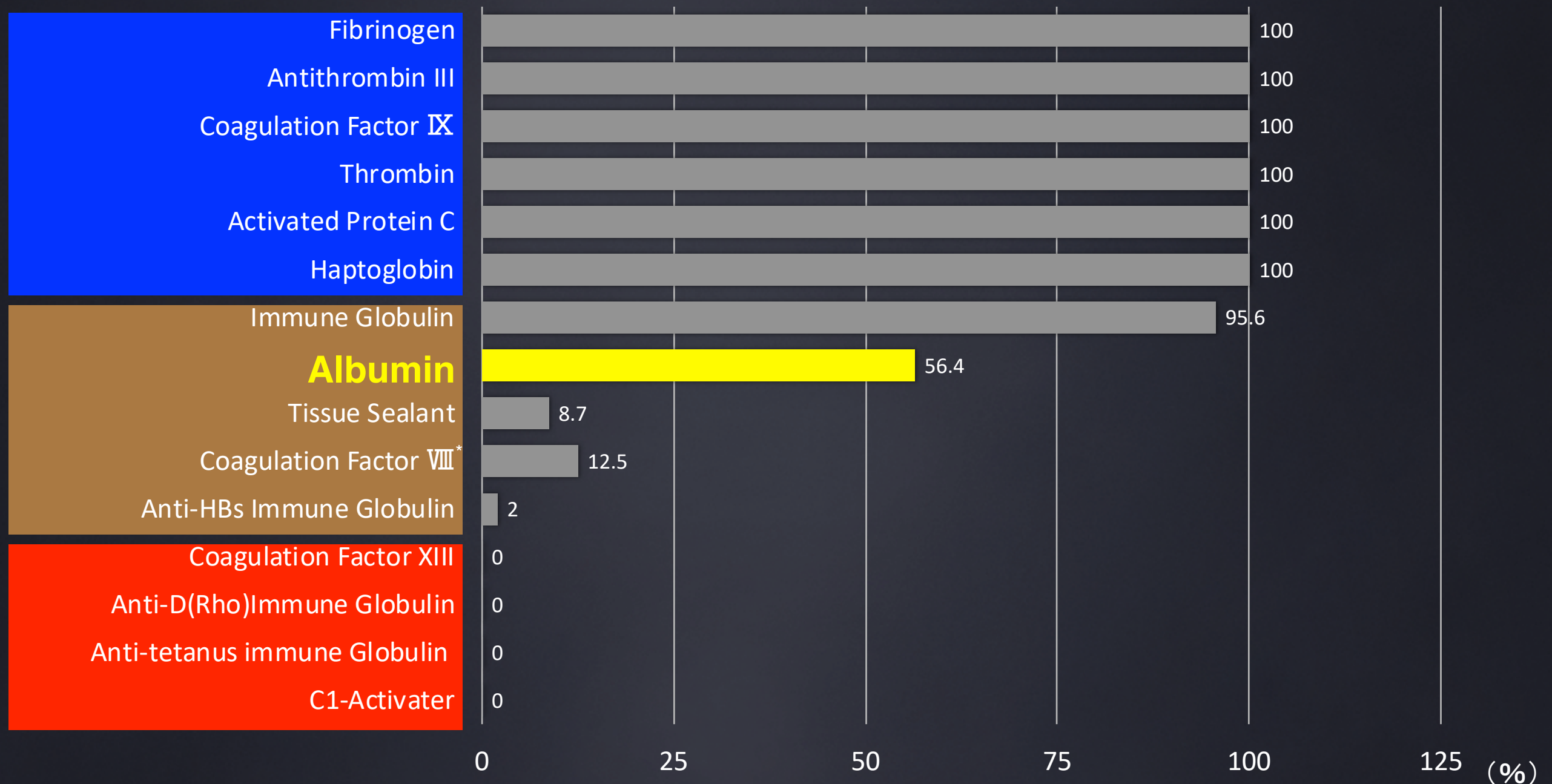
# The blood supply system in Japan



# The blood supply system in Japan



# Self-sufficiency rate of PDMPs in Japan (2015)



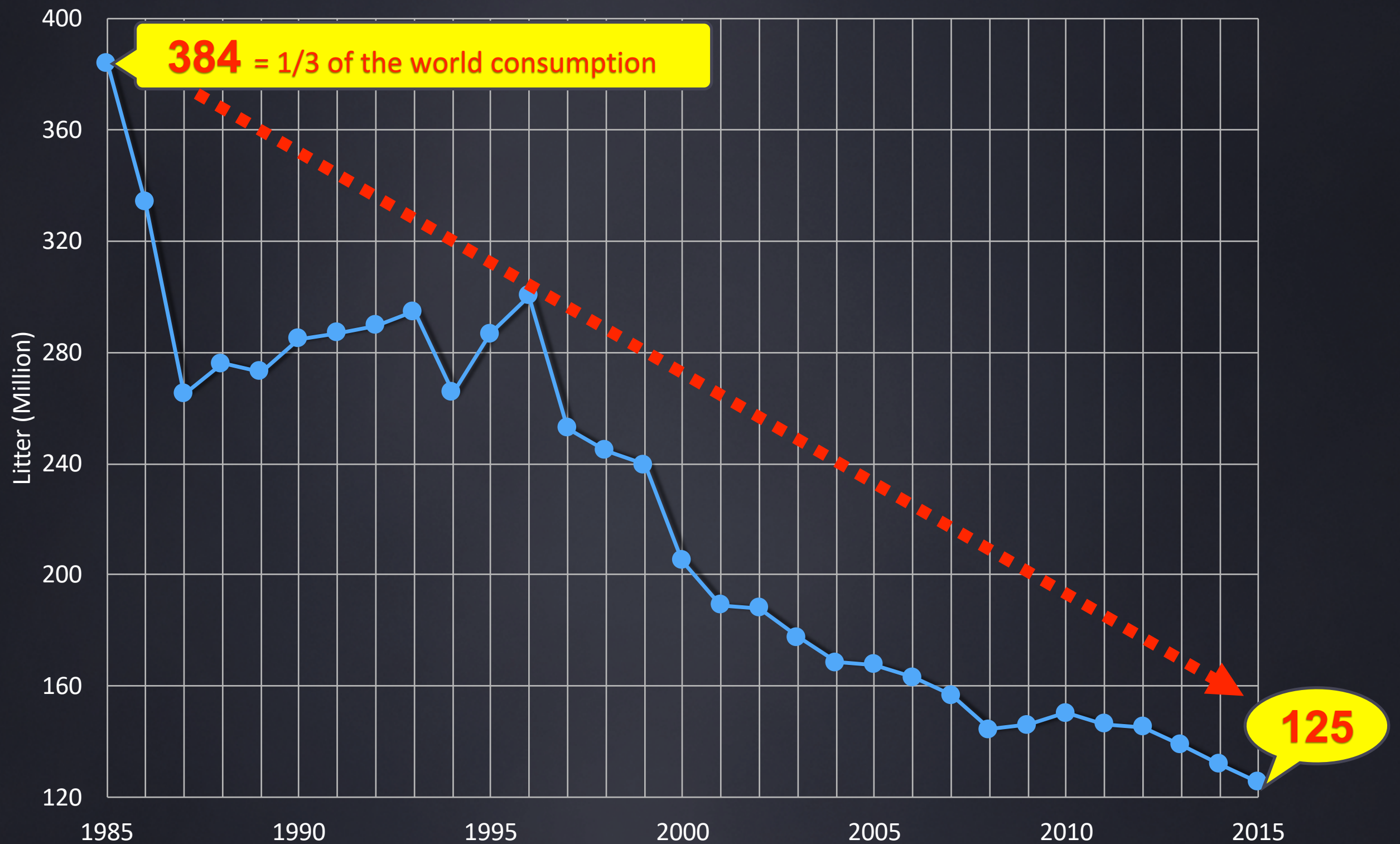
\*self-sufficiency rate of pdFVIII (including recombinant FVIII)

Reference: Ministry of Health, Labour and Welfare



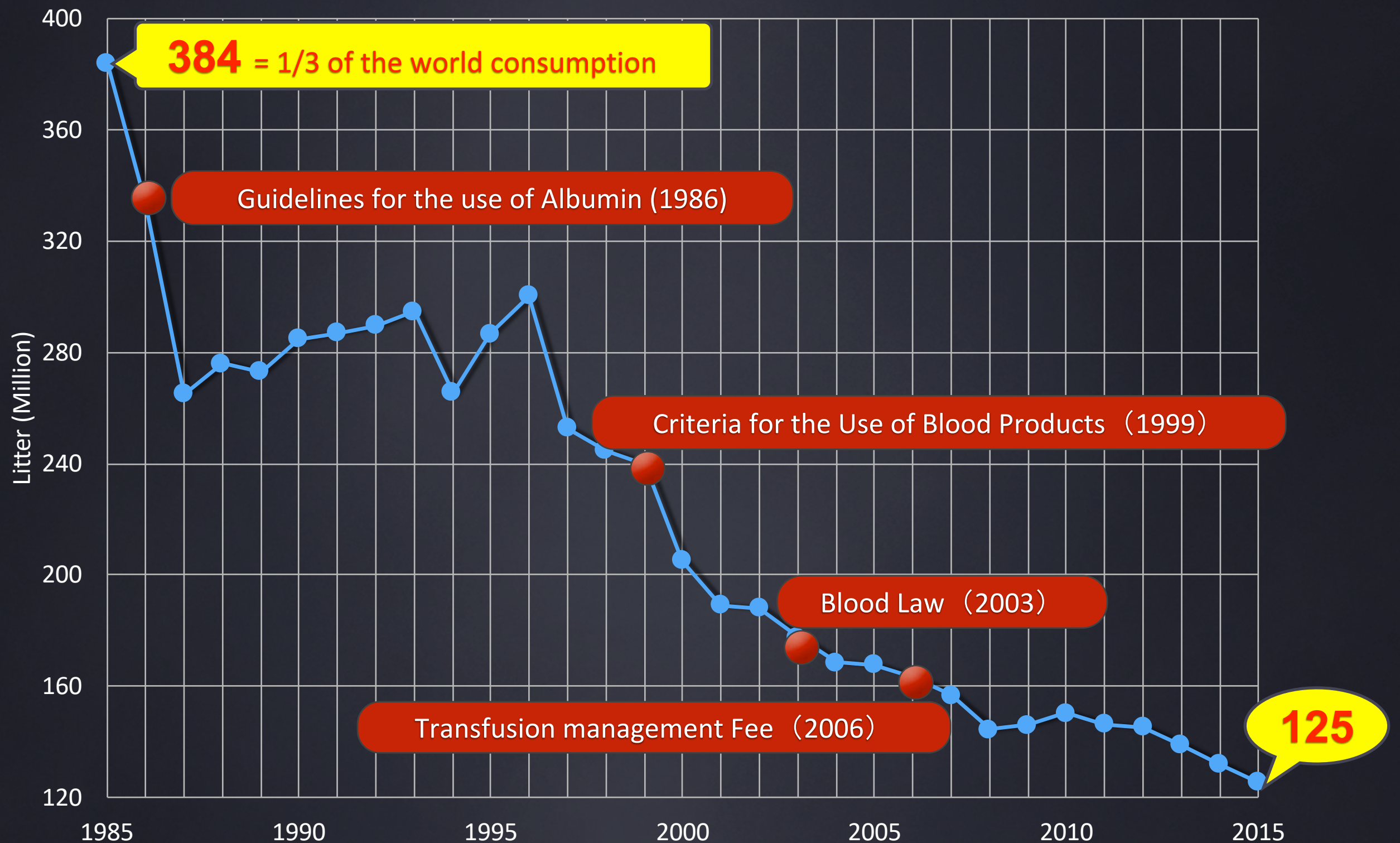
On 1985,  
the use of albumin in Japan was  
extremely high, approximately  
 $\frac{1}{3}$  of the total produced  
worldwide being consumed in  
Japan, which depended on  
up to 95% importation.

# 30 year trend of Albumin use in Japan



modified from Ministry of Health, Labour and Welfare materials

# 30 year trend of Albumin use in Japan



# Blood Law\* - Principles

- To improve the safety of blood products
- To secure the stable blood supply of blood products through the domestic non-remunerated blood donations
- To promote appropriate use of blood products
- To ensuring fairness and improving transparency in managing the blood program

\* The Law on Securing a Stable Supply of Safe Blood Products

# Blood Law\* - Basic Policy

The Basic policy of the Blood Law is revised every five years.  
(2003, 2008, 2013)

- To use of blood products appropriately
- To achieve domestic self-sufficiency of Albumin
- To obtain informed consent from the patients on the origin of the blood products

\* The Law on Securing a Stable Supply of Safe Blood Products

# Transfusion Management Fee

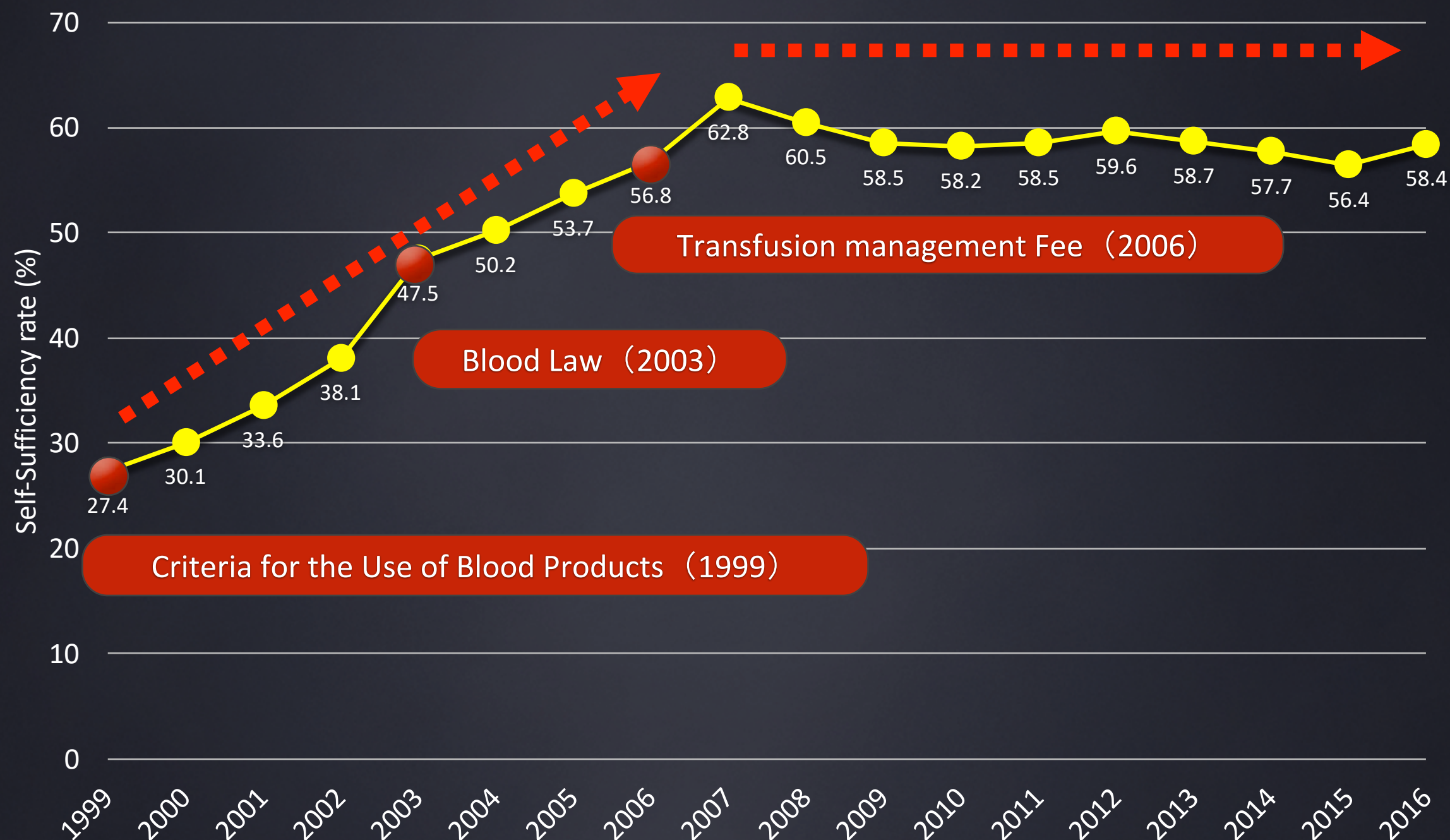
Transfusion management fee is paid for the institutions

- with the blood transfusion management system
  - Physician responsible for blood transfusion
  - Medical technologist responsible for blood transfusion
  - 24-hours-a-day provision of blood transfusion tests
  - Hospital transfusion committee
- Unified management of ALB by the division of transfusion\*
- perform safe and appropriate transfusion practices (Appropriate use addition)
  - ALB / RBC < 2.0
  - FFP / RBC < 0.54\* or 0.27\*\*

\* Transfusion Management fee (I)

\* \*Transfusion Management fee (II)

# Self-Sufficiency of Albumin in Japan



# Clinical Guidelines for the use of Albumin

- Guidelines by the government
  - Guidelines for the use of blood products (1986)  
RBC, FFP, Albumin
  - Criteria for the use of blood products (1999 → 2017 → 2018)  
RBC, FFP, PC, Albumin
- Evidence-Based Guidelines for the Use of Albumin Products by the Japan Society of Transfusion Medicine and Cell Therapy (2015~)

—【Guideline】—

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**Evidence-based Guidelines for the Use of Albumin Products**

**Japan Society of Transfusion Medicine and Cell Therapy**

*Satoshi Yasumura<sup>1)</sup>, Shigeyoshi Makino<sup>2)</sup>, Masanori Matsumoto<sup>3)</sup>, Takehiro Kono<sup>4)</sup>, Shuichi Kino<sup>5)</sup>,  
Asashi Tanaka<sup>6)</sup>, Akemi Wakisaka<sup>7)</sup>, Yuji Yonemura<sup>8)</sup> and Tadashi Matsushita<sup>9)</sup>*

- Clinical questions (CQs) were formulated regarding a total of 17 pathological conditions.
- Searches were conducted based on domestic and overseas papers on albumin.

| <b>Edition</b>          | <b>Years of Search</b> | <b>Hit Counts of Papers on Search</b> | <b>Number of Papers Included in Primary Section</b> |
|-------------------------|------------------------|---------------------------------------|-----------------------------------------------------|
| <b>1st (June. 2015)</b> | 1972-2014              | 3059                                  | 310                                                 |
| <b>2nd</b>              | 2014-2016              | 892                                   | 126                                                 |

# Clinical Questions on Albumin

- Hemorrhagic shock
- Severe sepsis
- Ascites secondary to liver cirrhosis
- Nephritic syndrome with refractory edema or pulmonary edema
- Extracorporeal circulation with unstable hemodynamics
- Therapeutic plasma exchange not requiring the replacement of coagulation factors
- Severe burns
- Pulmonary edema or marked edema due to hypoproteinemia
- Markedly decreased circulating plasma volume
- Cerebral ischemia (head injury)
- Heart surgery with cardiopulmonary bypass
- Hypoalbuminemia with stable hemodynamics during the perioperative period
- Pregnancy-induced hypertension
- Inflammatory bowel disease
- Nutritional support as a source of protein
- Terminally ill patients
- Pathological conditions that are not eligible for other plasma expanders

# Evidence-Based Guidelines for the Use of Albumin Products

## Japan Society of Transfusion Medicine and Cell Therapy

- Evidence levels and grades of recommendation were determined according to the *Minds Handbook for Clinical Practice Guideline Development 2014*.
- The strength of recommendations was presented in 2 ways  
“1”: strongly recommended  
“2”: weakly recommended (suggested)
- Overall strength of evidence across outcomes (A,B,C,D) was put down with the above strength of recommendations.

|                      |                                                        |
|----------------------|--------------------------------------------------------|
| <b>A (strong)</b>    | <b>strongly confident of the estimate of effect</b>    |
| <b>B (moderate)</b>  | <b>moderately confident of the estimate of effect</b>  |
| <b>C (weak)</b>      | <b>limited confidence of the estimate of effect</b>    |
| <b>D (very weak)</b> | <b>very little confident of the estimate of effect</b> |

# Strongly recommended administration of hypertonic albumin product (25%, 20%)

## Liver Cirrhosis patients

- Type 1 hepatorenal syndrome (1A)
- Spontaneous bacterial peritonitis (1A)
- Large volume paracentesis (1A)
- Management of refractory ascites (1B)

# Strongly recommended administration of isotonic albumin product (5%)

- Therapeutic plasma exchange for neurological disorders , such as CIDP, GBS (1A)
- Therapeutic plasma exchange for removing anti-A or anti-B antibodies in ABO-incompatible transplantation when used in combination with immunosuppressant agents (1B)

# No strong evidence to support the use of albumin product

- Hypoalbuminemia
- Cardiac surgery
- Volume resuscitation for hypovolemia
- Cerebral ischemia / hypovolemic brain injury
- Hypotension during dialysis therapy

# Promotion of Appropriate Usage of Albumin at Osaka Medical College Hospital

- Changing the entity in charge of the management of albumin from the Department of Pharmacy to the Division of Transfusion Medicine in 2007 .
- Setting the similar management of RBC, PC, and FFP on Albumin.
  - Individual identification numbering
  - Prohibition of keeping albumins in wards
  - Management by standard medical record form

# Standard format of transfusion report at Osaka Medical College Hospital

- The format consists of
- Purpose of transfusion
  - Pre-transfusion laboratory data
  - Side Effects
  - Post-transfusion laboratory data
  - Assessment

The documents should be completed by the doctors on each administration and are evaluated by the Transfusion Division on the basis of the clinical guidelines.

**輸血関連伝票 (No. ) 診療録控え 患者 ID**

・輸血・投与終了後は、速やかに副作用の有無、検査所見、総評、医師サインを記入し  
コピーを輸血室へ提出してください。 ☐ 提出用コピー済み

・読み合わせ照合必須実施!!

|                                                               |         |                    |                          |
|---------------------------------------------------------------|---------|--------------------|--------------------------|
| ID: 0001111111                                                |         | アルブミン5%250ml 57362 | Ir-RCC-LR1U 65121        |
| 氏名: 大 太郎                                                      |         | アルブミン20%20ml 56712 | Ir-RCC-LR2U 65122        |
| 生年月日: 1940/12/23 72才                                          |         | アルブミン20%50ml 49573 | FFP-LR1 (120) 54807      |
| 血 型: A+                                                       |         | Ir-PCSU 65105      | FFP-LR2 (240) 54808      |
| 重 型:                                                          |         | Ir-PC10U 65106     | FFP成分 57056              |
| DAT:                                                          |         | Ir-PC15U 65107     | 抗体3分-コンダ 05301           |
| 抗体: (-)                                                       |         | Ir-PC20U 65108     | 直接-ALX 07431             |
| 妊娠歴:                                                          | 輸血歴: 有り | 副作用:               | 使用日: 2012/11/10 使用場所: 病棟 |
| 使用目的: 肝硬変難治性腹水                                                |         | 診 療 科: 消化器内科 24病棟  |                          |
| 輸血・投与前検査所見                                                    |         | 術式/病名:             |                          |
| Hb: g/dl PLT: x1000/μl PT: % APTT: 秒 FIB: mg/dl ALB: 1.2 g/dl |         | 同意書: 2012/10/03    |                          |

| OP | ICU | 製剤名           | 型 | 製剤番号          | 有効期限       | 判定 | 実施日   | 確認者 | 実施者 | 開始<br>入力 | 終了<br>入力 | 返却 |
|----|-----|---------------|---|---------------|------------|----|-------|-----|-----|----------|----------|----|
|    |     | アルブミン20% 50ml |   | 2A839-001101G | 2014/02/28 |    | 11/10 | 志磨  | 河野  | ✓        | ✓        |    |
|    |     | アルブミン20% 50ml |   | 2A839-001102G | 2014/02/28 |    | 11/10 | 志磨  | 河野  | ✓        | ✓        |    |

・製剤の保有期間は / / 日 ( 8 : 20 ) までです。  
以後は、返却してください。

・時間外で用意した血液製剤のうち通常業務開始までに輸血・投与しなかった  
製剤は、返却処理を行います。

・返却する製剤の返却欄にチェックをしてください

| 検査者 | 返却日 | 返却者 | 返却受取 |
|-----|-----|-----|------|
| 増田  |     |     |      |

検査日:

輸血・投与後副作用: (無) ・ 有 (原因製剤の番号: )

|                              |            |                            |                 |
|------------------------------|------------|----------------------------|-----------------|
| 1) 発熱 (℃)                    | 5) 発赤・顔面紅潮 | 9) 腹痛・胸痛・腰背部痛              | 14) 血管痛         |
| (≥38℃、輸血前値から≥1℃上昇)           | 6) 発疹・蕁麻疹  | 10) 頭重感・頭痛                 | 15) 意識障害        |
| 2) 悪寒・戦慄                     | 7) 呼吸困難    | 11) 血圧低下 (収縮期血圧≥30mmHgの低下) | 16) 赤褐色尿 (血色素尿) |
| 3) 熱感・ほてり (チアノーゼ、喘鳴、呼吸状態悪化等) | 8) 嘔気・嘔吐   | 12) 血圧上昇 (収縮期血圧≥30mmHgの上昇) | 17) その他         |
| 4) 掻痒感・かゆみ                   |            | 13) 動悸・頻脈 (成人: 100回/分以上)   |                 |

輸血・投与後検査所見:

Hb: g/dl PLT: x1000/μl PT: % APTT: 秒 FIB: mg/dl ALB: 1.5 g/dl

総評: 腹水の軽減に寄与した。

Print: 2013/1/11 17:32:3 大阪医科大学附属病院

# Concluding Remarks

- To promote an appropriate usage of albumin, legal approach, economical approach, and setting the evidence-based guidelines were all effective in Japan.
- The most important and difficult thing is how to change the experience-based administrations of each doctor.

Thank you very much  
for your attention.