QUEENSLAB
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BREADTH OVER FREQUENCY

Why the Next Plasma Supply Risk Is Concentration, Not Volume

INDUSTRY OPERATION ANALYSIS SERIES · PART IV

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Part IV — Breadth Over Frequency

Why the Next Plasma Supply Risk Is Concentration, Not Volume

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Commercial plasma collection in Central Europe has grown on one lever: getting the same donors to come back as often as possible. From August 2027, that lever weakens. The SoHO Regulation names frequent plasma donation as a donor-health risk, removes the incentives that drove frequency, and asks Member States to build donor bases that do not depend on a few frequent donors. Operators who keep relying on frequency will carry a supply risk they cannot see in today's volume reports.

> **Core thesis:** After 2027, the resilient plasma operator is not the one with the most donations per donor, but the one with the most donors. Breadth is cheaper to protect than frequency, safer for donors, and the direction the Regulation is already pointing.

1. Why the frequency model is ending

The SoHO Regulation does not set a single EU cap on plasma donations. It does something more lasting: it treats frequency as a risk to manage, not a target to maximise.

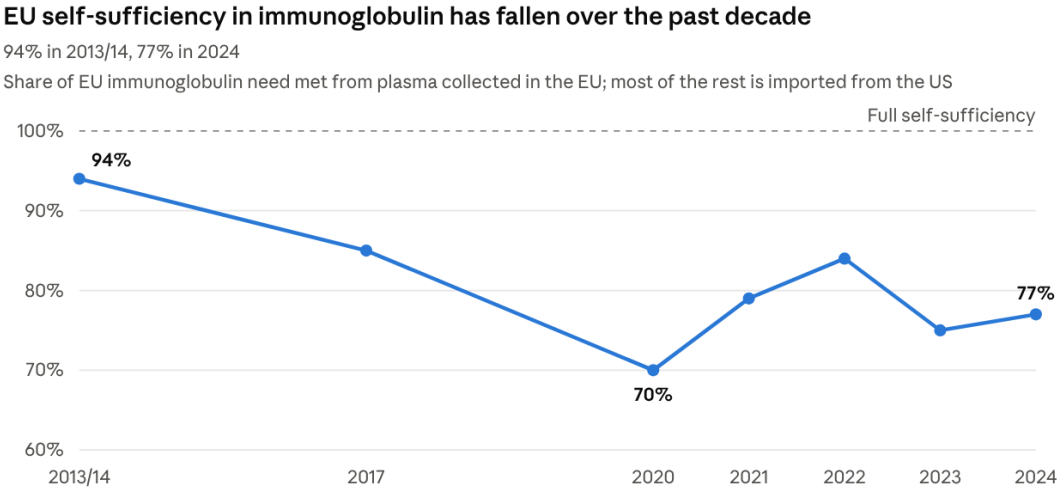
Provision	What it says	What it means for frequency
Recital 55	Frequent plasma donation is named alongside oocyte and bone marrow donation as a case where donor health monitoring matters most	Frequency becomes a regulated risk, monitored in proportion to its level
Recital 58	Compensation must not encourage donors to donate more often than allowed, and must not lead to competition between operators for donors	Incentives that reward frequency lose their legal basis
Article 54	Operators may not offer donors financial incentives or inducements (54(1)). Where a Member State allows compensation, national law sets its conditions and an upper limit aimed at financial neutrality (54(2)). Promotion and publicity may not refer to compensation (54(4))	Compensation stays, but it can no longer be designed or advertised to make donors come more often: no bonus stacking for frequent visits
Article 3(45)(f)	Prolonged sub-optimal health after single or multiple donations is a serious adverse reaction	Harm from repeated donation must be reported
Article 3(58)	Donor-base resilience is defined as relying on a large number of donors	The Regulation's own measure of resilience is breadth
Recital 79	The Commission may adopt implementing acts on donation frequency where it implies a risk	EU-wide frequency rules remain possible

The gap between current practice and guidance is already wide. The EDQM Blood Guide recommends a maximum of two plasma donations per month, with weekly donation only under enhanced monitoring. The United States allows up to 104 donations a year. A 2025 review in *Transfusion and Apheresis Science* concluded that evidence on the long-term health effects of frequent plasmapheresis is poor and called for high-quality studies.

For an operator, the direction is clear even where the final rules are not. A business that depends on its most frequent donors is building on the part of its model most exposed to regulation.

2. The supply picture

Europe already depends on others for about a quarter of its immunoglobulin, and a handful of countries, the Czech Republic among them, carry most of what Europe collects.



Hotchko (Marketing Research Bureau), IPFA/EBA workshop, Feb 2026 · EU immunoglobulin self-sufficiency, 2013/14–2024

The EU collected just over 10 million litres of plasma in 2024, up 7.6% on 2023. Commercial operators collected 52% of it, in only four countries holding a quarter of the EU population. The United States, which allows up to 104 donations a year, collects about two thirds of the world's plasma and covers Europe's deficit.

Country	Plasma collected by apheresis, 2023 (litres)	Litres per 1,000 inhabitants, 2023	Change since 2020
Czech Republic	1,116,700	103	+66%
Austria	503,826	55	not comparable (reported in units until 2021)
Germany	2,482,918	29	+19%

Source: EDQM, *The Collection, Supply and Use of Blood and Blood Components in Europe: 2020–2023 Report*, Appendix 3, Table C03. Per-capita figures calculated by QueensLab Group using Eurostat population on 1 January 2023. Hungary is not shown: its national figures cover only the national blood service, not private plasma centers, so they are not comparable.

The Czech Republic collects more plasma per inhabitant than any neighbour that reports comparable data: almost twice Austria's rate and three and a half times Germany's. The gap is widening. Czech apheresis collection grew by two thirds between 2020 and 2023, and EDQM lists Czechia among only four countries with a consistent increase in every year. That intensity is a strength today. It is also exposure: the more a national supply depends on repeat visits, the more it is affected by rules that limit or discourage frequency.

One figure is missing from every public source: how concentrated the donor base is. No published data shows what share of Czech plasma comes from the most frequent donors. That gap is itself the finding. Operators cannot manage a concentration risk they do not measure.

3. Concentration risk: why a narrow donor base breaks

A donor base built on frequency fails in four ways: when donors cannot come, when they leave, when the rules change, and when donors push the safe interval. In each case, the more volume sits with a few donors, the bigger the loss.

When donors cannot come. The Regulation draws this lesson from COVID-19 itself. Recital 65 notes that the pandemic hit hardest in countries whose collection relies on a small number of people donating more frequently than elsewhere. The chart in Section 2 shows the result: EU self-sufficiency fell to 70% in 2020, its lowest point in a decade.

When donors leave. Losing a frequent donor costs many donations at once. In the scenario model described below, the most frequent 5% of donors give 15–18% of all volume. Replacing each of them takes about three new donors who come six times a year in a broad base, and about four in a concentrated one. Frequent donors are also the most exposed to vein fatigue and the adverse reactions that, as Part III showed, sharply reduce the chance of return.

When the rules change. Recital 79 allows the Commission to adopt implementing acts on donation frequency. Member States may also set stricter rules (Article 4). In the Czech Republic, Decree No. 143/2008 Coll. caps plasma at 650 ml per donation (unless intravenous saline replacement is given), 1.5 litres a week and 25 litres in 12 months, and the national donor-eligibility standard STL_03 sets a 14-day minimum interval between plasma donations, which means at most 26 donations a year. In practice, saline replacement is routine and collection volumes are set by donor weight, typically 650–890 ml including anticoagulant. The 26-donation ceiling sits just above the EDQM guide's recommended two donations a month. Any lower limit cuts volume immediately, and the cut is proportional to how concentrated the base is.

When donors push the interval. On the floor, frequency pressure shows up in a specific way. Regular donors lose track of their own schedule: they forget where they donated last, arrive before the statutory 14-day interval has passed, and have to be turned away. Some believe the rule is not enforced, or have missed that it now is: the national blood donor register run by ÚZIS records every donation and identifies a donor on arrival, before collection, so that the minimum interval between donations cannot be broken across centers. Its donor module was introduced by Act No. 240/2024 Coll. Occasionally a donor tries to donate at a second operator on the same day they already donated at another. In most cases this is confusion rather than intent, but the effect is the same: a donor at the edge of the safe interval, and a turned-away visit that ends in frustration. With the register in place, these attempts no longer pass unnoticed; they end in a refused visit. A center relying on its most frequent donors is relying on the group most likely to run into that limit. This is precisely the risk the Regulation's donor-protection rules on frequency are built to catch.

What a scenario model shows

To show the mechanism, QueensLab Group built a scenario model on a synthetic dataset of about 780 established donors followed over 12 months. Three versions of the same base differ only in how concentrated it is: as built; with half of the regular and occasional donors removed (high concentration); and with half of the super-active donors removed (low concentration). The numbers describe the model, not any real center.



Figure 1. Frequency dependency in the three versions of the base. Scenario model on a synthetic dataset built by QueensLab Group: about 780 established donors over 12 months. High concentration: half of the regular and occasional donors removed. Low concentration: half of the super-active donors removed. Shows the mechanism, not any center's actual figures.

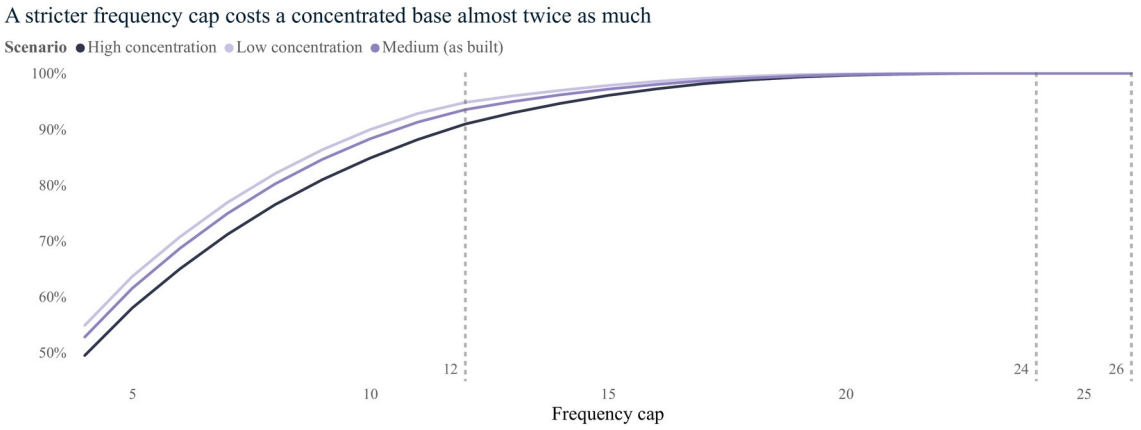


Figure 2. Volume retained under a frequency cap, same scenario model. Dashed lines: 12 = illustrative stricter cap; 24 = EDQM guide; 26 = Czech maximum (14-day interval).

	High concentration	As built	Low concentration
Volume from donors giving more than 12 times a year	33%	24%	19%
Volume kept under a cap of 18 a year	98.8%	99.2%	99.5%
Volume kept under a cap of 12 a year	90.9%	93.5%	94.8%
Loss under a cap of 12	−9.1%	−6.5%	−5.2%

Three findings follow. First, today's Czech ceiling does not bind: in the model, even the most frequent established donors stay at around 20 visits a year or fewer, and a cap of 18 would cost less than 1.5% of volume in any version.

Second, below that point the loss accelerates: under a cap of 12, the concentrated base loses 9.1% of its volume, almost twice the 5.2% lost by the broad one. Third, the usual concentration metric would not have warned anyone.

In all three versions, the most frequent fifth of donors gives about half of the volume (46–48%). What separates them is how much volume sits above the frequency line a regulator could draw.

Two centers can look equally efficient in a volume report and carry very different exposure, and the difference only shows on the day the rule changes.

4. Breadth as strategy: what it costs and what it returns

Breadth is not free. Every new donor needs a full medical screening and first-visit testing, and first-time donors are deferred more often than regulars. The case for breadth is therefore not "more donors at any price". It is: add donors where each new one costs least, and keep them.

Where breadth is cheapest

Source	Why it is cheaper	Evidence
Referrals from existing donors	The new donor arrives already trusting someone who donates; the referrer often comes with them	Floor observation: a typical donor brings in two or three others, mostly family
Employer groups	One agreement brings an organised group; the employer handles motivation and communication	SCB guidance places employer appreciation outside Article 54
Lapsed donors	Already screened and familiar with the process	They have a donor record; reactivation needs no new acquisition
Direct, personal approach	Being asked directly, or knowing a patient, raises willingness to donate	2024 study of frequent voluntary plasma donors across four blood centers

Non-cash approaches can move the numbers. In a Flemish field study presented at the IPFA workshop in 2025, information combined with a small in-kind token raised plasma donations by 11.7%, at a marginal cost of €10–16.5 per extra donation. That was in a voluntary system, not a commercial one, but it shows that growth without cash incentives is measurable and affordable.

What breadth returns

- **Lower exposure to frequency rules.** Volume no longer hinges on the donors a cap would affect most (Section 3).
- **Smaller losses when a donor leaves.** Churn is spread across many donors instead of concentrated in a few.
- **Healthier donors.** Lower average frequency means less exposure to the long-term effects the evidence has not yet ruled out.
- **Regulatory alignment.** Article 3(58) defines resilience as breadth. An operator that can show a broad, stable base is speaking the regulator's own language, which matters when national emergency plans and compensation conditions are written.

The trade-off is real: a broad base needs more donors to deliver the same volume, so it needs better retention. Breadth and retention are not two strategies. They are one.

5. What to measure: donor-base resilience

Volume reports show how much plasma came in. They do not show how fragile that volume is. Six numbers do, and every operator already holds the data to calculate them.

Metric	How to calculate	What it warns about
Frequency dependency	Share of annual donations from donors who give more than 12 times a year	How much volume depends on the donors most exposed to frequency rules
Frequency-cap exposure	Donations that would be lost if frequency were capped at 12 or 24 a year	The size of the regulatory risk, in litres
Active donor count	Donors with at least one visit in the last 12 months	Whether the base itself is growing or shrinking, separate from volume
12-month retention	Share of donors active a year ago who are still active	Whether new donors are kept long enough to repay their acquisition
Referral share	Share of new donors who arrived through an existing donor or an employer group	Whether growth comes from the cheapest source of breadth
Early-arrival rate	Share of visits turned away because the minimum interval had not yet passed	How many donors are losing track of, or pushing, the safe interval

The first metric deliberately replaces the familiar "top 20% share". In the scenario model, the most frequent fifth gave about half of the volume whether the base was broad or concentrated, so that number could not tell the two apart. The share above a frequency line could. Together they answer the question a volume report cannot: if frequency had to fall tomorrow, how much of this center's supply would remain?

These metrics also make a good test before any intervention. Measured before and after a pilot, they show whether a retention or referral programme actually broadens the base, rather than just moving the same donors around.

6. Conclusion

The next plasma supply shock will not come from too few litres. It will come from too few donors behind those litres.

The SoHO Regulation already points the way: it treats frequency as a health risk, removes the incentives that drove it, and defines resilience as breadth. Europe's supply depends on a handful of high-intensity countries, the Czech Republic first among them, and still imports about a quarter of its immunoglobulin. The industry association PPTA puts the share of plasma for Europe's medicines that comes from the United States at nearly 40%. The two figures measure different things, finished immunoglobulin versus raw plasma, but they point the same way. A center that measures only volume cannot see how much of its supply rests on its most frequent donors.

Before August 2027, operators can:

1. **Calculate their frequency dependency and frequency-cap exposure** from data they already hold.
2. **Set a target for active donors, not only for litres,** and report both.
3. **Shift acquisition toward the cheapest breadth:** referrals, employer groups and lapsed donors.
4. **Test one retention or referral intervention in one center,** and measure it against the six metrics in Section 5.

Kinlume™, the donor engagement platform introduced in Part III, is built for exactly this: referral trees that make donor networks visible, an employer channel, and no pressure on frequency.

QueensLab Group is looking for one operator to pilot it before August 2027 and measure the result against these metrics.

Where does your center sit? The scenario model shows the mechanism. It cannot show where a real center sits on the curve; only that center's own data can. QueensLab Group calculates frequency dependency and frequency-cap exposure on an operator's own data, under NDA, and returns the result as a short decision memo. For a first conversation, a 20-minute call is enough: write to office@queenslabgroup.com or send a direct message to the founder of QueensLab Group on LinkedIn.

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