



Minimizing the Ecological and Economic
Burden of Medication Waste in Europe
Brussels, June 26th, 2025

Lessons Learned in the Pan-European Study on Medication Usage and Disposal

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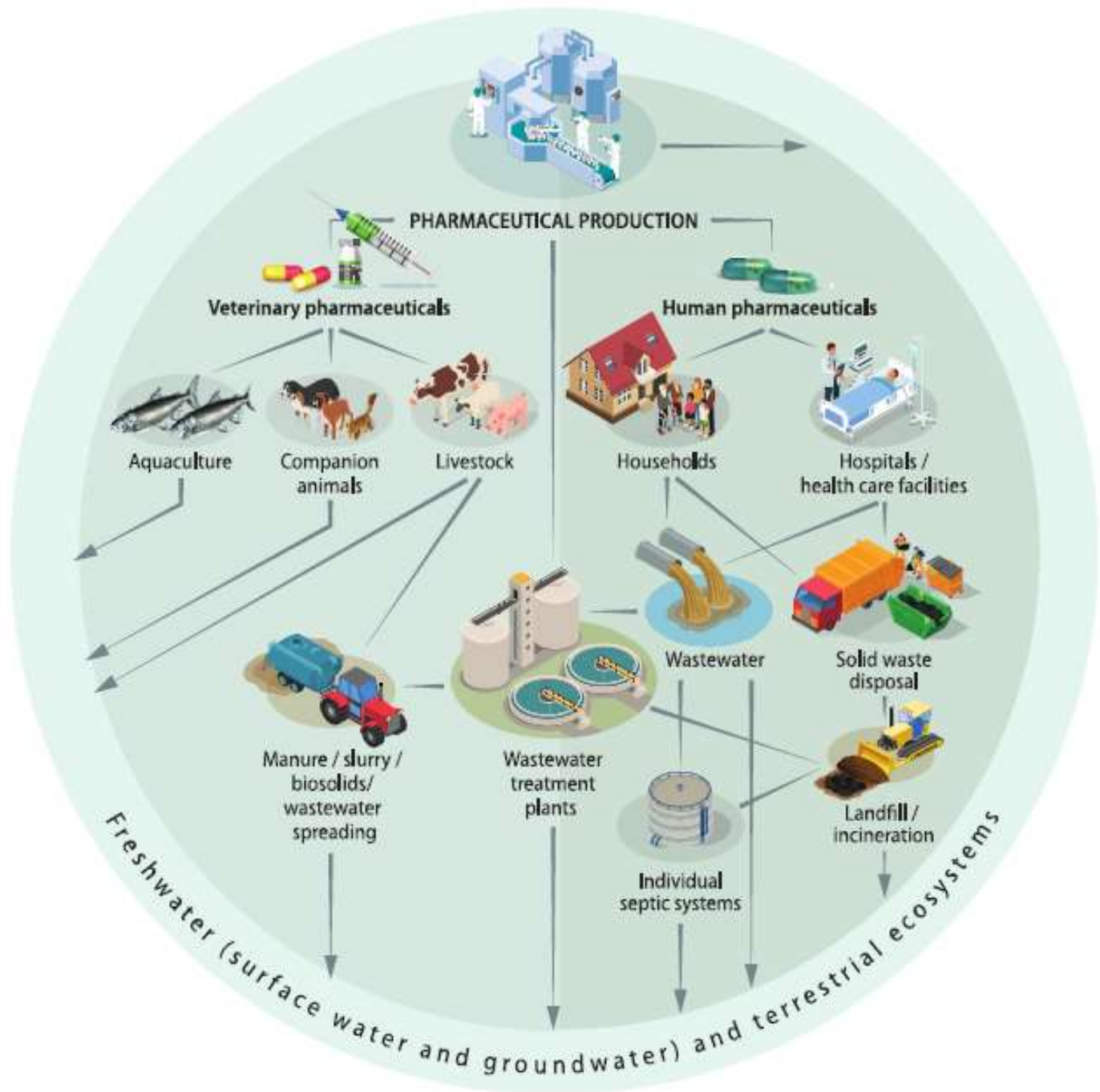


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Introduction: Pharmaceuticals and environment

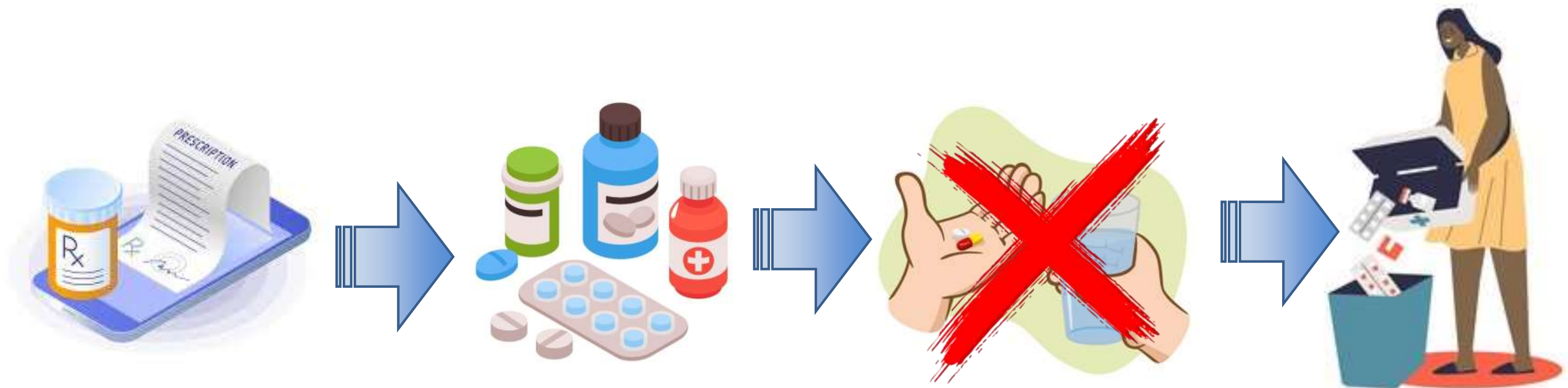


Source: OECD. *Pharmaceutical Residues in Freshwater: Hazards and Policy Responses*, OECD Studies on Water, OECD Publishing, Paris, 2019. <https://doi.org/10.1787/c936f42d-en>.



Introduction:

Unused and Expired Household Medications



- Change of therapy
- Non-adherence
- Death



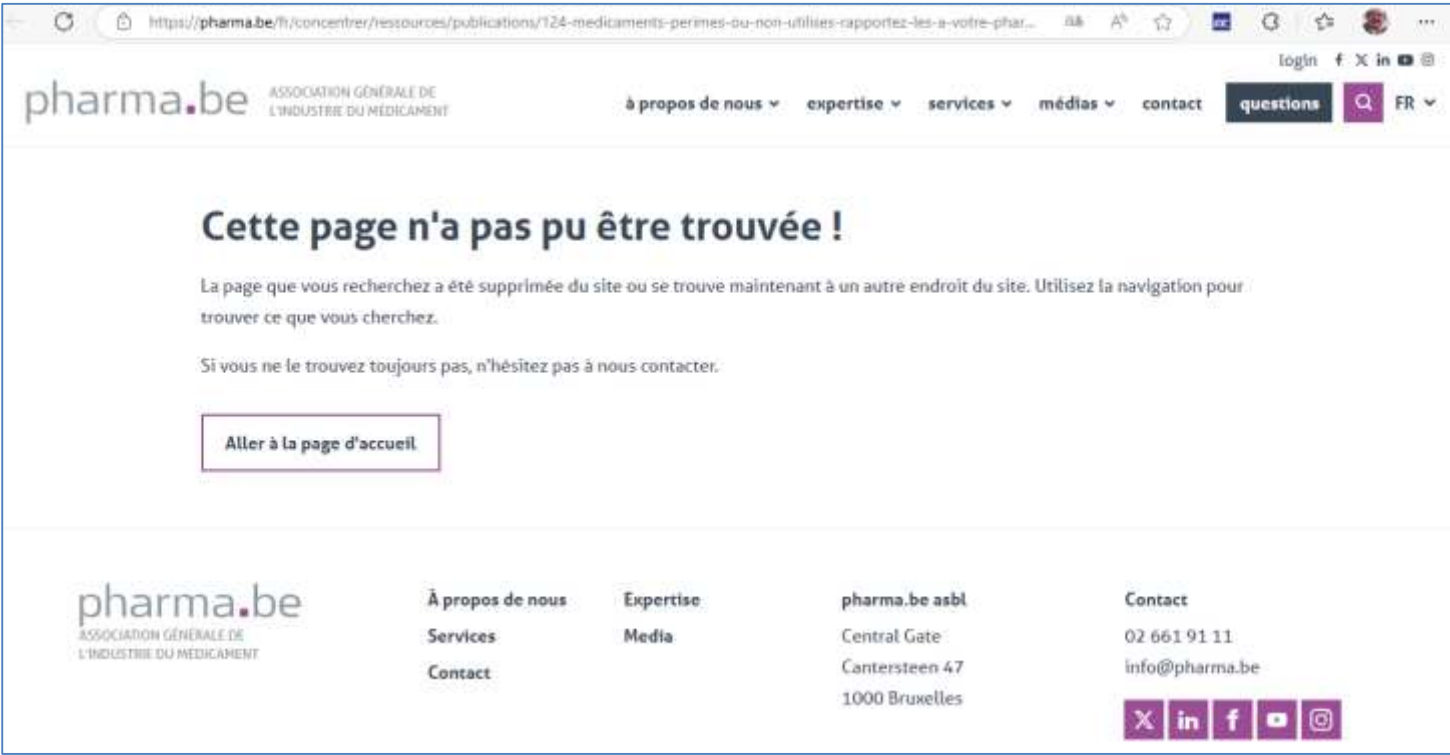
Introduction:

Disposal of Unused & Expired Medications



Pharmaceutical waste (both human and veterinary) should be returned exclusively to community pharmacies. The outer box and paper leaflet should be removed and disposed of according to normal waste management schemes. This applies also to empty glass bottles and blisters. Used needles and sharps should be collected in a syringe container (for sale at community pharmacies) and should be collected in the municipal container park as biohazard waste

Link : joint initiative on medicines take back in Belgium





Introduction: Good practices exist...



Aktualności KulturaBB

AKTUALNOŚCI

Przeterminowane leki: dziesięć t

KABE 18 STYCZNIA 2025



- Expired medications should be disposed of at pharmacies or Municipal Waste Collection Points.
- There are 61 medication collection points in Lublin.
- The containers (so-called “confiscation containers”) are provided by the municipality as well as in other cities.
- Medications can also be dropped off at pharmacies.
- Residents dispose of approximately 10 tons of expired medications annually.
- In 2025, the cost of managing the collection will amount to around PLN 14,000 per ton.
- DISPOSAL COST: PLN 14,000 per ton.

WWW.RADIOEM.PL ▶ GLIWICE: ZEBRANO 11 TON PRZETERMINOWANYCH LEKÓW

Gliwice: zebrano 11 ton przeterminowanych leków
11 ton przeterminowanych leków oddali w minionym roku mieszkańcy Gliwic. Podsumowały zbiórkę i ogłosiły sukces.

autor
Agata Nurek /Radio eM

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Kosz na przeterminowane leki
Agata Nurek /Radio eM



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<< Powrót

15 kwietnia 2010 roku

Wpływ niewłaściwej utylizacji leków na środowisko

Mała pigułka wygląda niegroźnie. Jednak jeśli jest ich tona, stanowią poważne zagrożenie dla środowiska naturalnego.

Już od wielu lat eksperci są zgodni, że bardzo ważnym zanieczyszczeniem środowiskowym są leki. Od

Fakty

Firma PROEKO, utylizuje rocznie około 165 ton leków. Łatwo więc wywnioskować jakie może być to przełożenie na skalę krajową. Są to miliardy złotych. Niewątpliwie największa ilość leków odbierana jest z regionu województwa mazowieckiego. Przyczyną najwyższego poziomu na tym obszarze kraju jest zapewne lokalizacja największych hurtowni farmaceutycznych- właśnie na Mazowszu. Niepokojącą informacją jest fakt, iż tendencja ilości odbieranych przez nas leków cały czas rośnie. Z roku na rok wskaźnik ten zwiększa się o ok 15-20%, w roku 2007 było to około 98 Mg; 2008 - 120Mg; 2009 - 165 Mg (Mg=MegaGram=Tona). Niszczono są leki ze wszystkich grup. Najmniej utylizujemy leków cytostatycznych oraz cytotoksycznych - zdarzają się one sporadycznie. Najczęściej leki do utylizacji oddają hurtownie farmaceutyczne oraz apteki. Hurtownie i producenci to około 90% naszych Klientów, apteki stanowią 10%. Najczęściej są to leki po terminie przydatności. Czasami zdarza się jednak, że trafiają do nas leki pełnowartościowe, które nie zostały dopuszczone do sprzedaży. Duża ilość akcji marketingowych połączonych z reklamami w mediach, które promują farmaceutyki, również nie sprzyja powstrzymaniu problemu. Ludzie na każdym kroku, kuszeni są coraz to lepszymi ofertami. Lepszymi pod względem ekonomicznym ale nie ekologicznym.

Aleksandra Potrykus, prezes Polskiej Grupy Recyklingu PROEKO

Source: https://lubbie.pl/aktualnosci/przeterminowane-leki-dziesiec-ton-rocznie?utm_source=chatgpt.com; January 18, 2025



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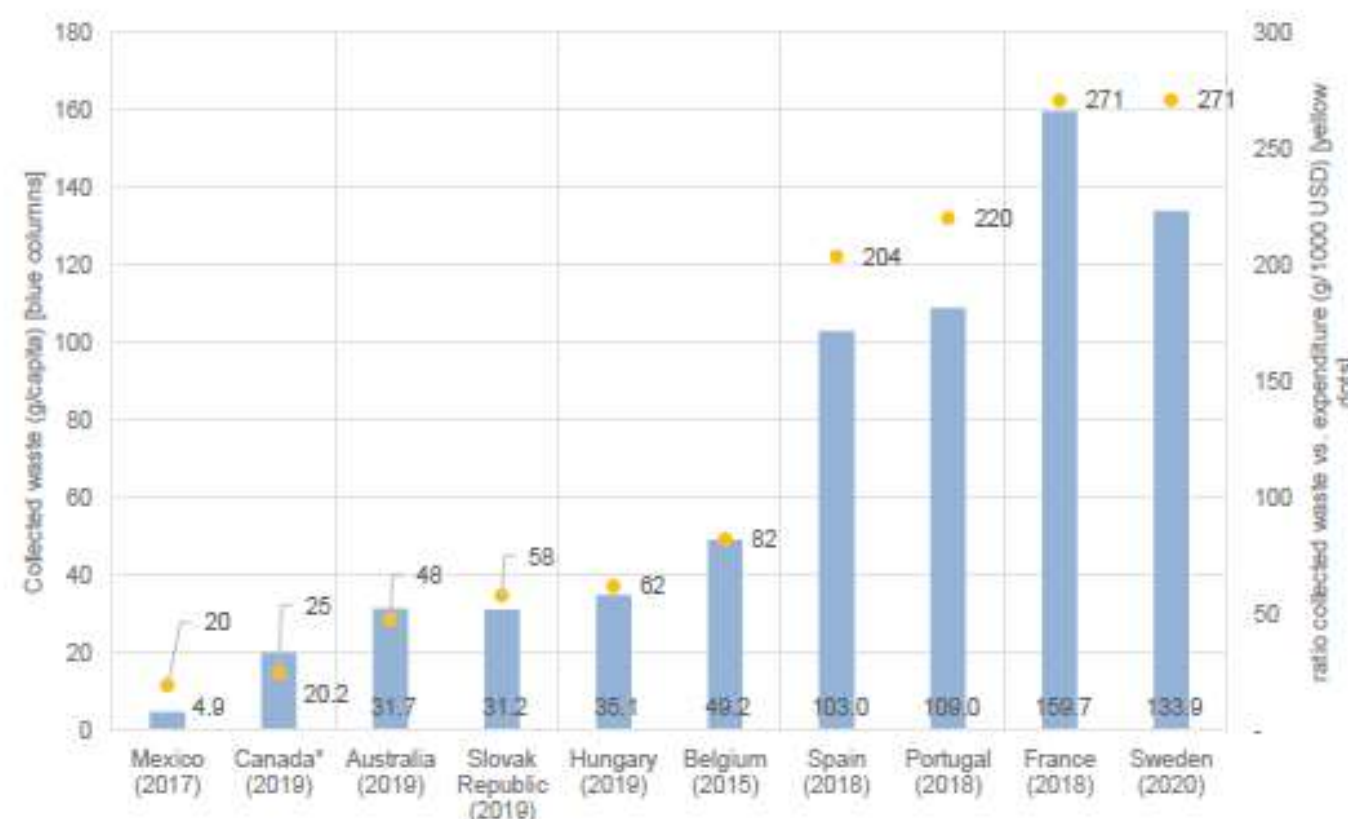
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Introduction:

Major collection gaps exist also...

Figure 4.2. Per capita collection rates of pharmaceutical waste in selected OECD countries [g/capita] (blue bars), compared to expenditure (yellow dots)



Source: OECD. (2022) Management of Pharmaceutical Household Waste.
https://www.oecd.org/en/publications/management-of-pharmaceutical-household-waste_3854026c-en.html

Calculation for Poland (per year):

Estimated Waste Generation:

38 million citizens \times 0.3 kg/person = **11,400 tonnes**

Estimated Collection Rate:

16 regions \times approx. 100 tonnes = **~1,600 tonnes**

Estimated Gap in Collection:

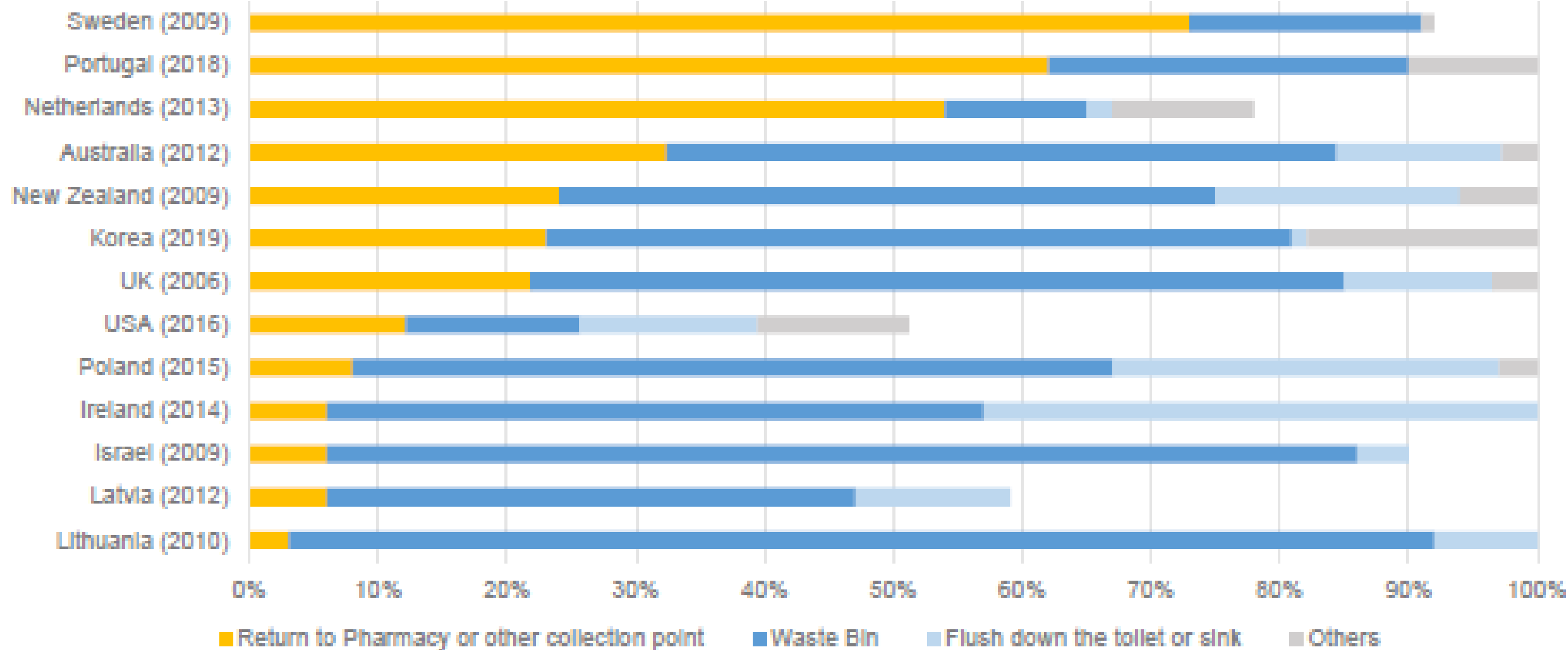
11,400 tonnes – 1,600 tonnes = **~9,800 tonnes/year**
(i.e. approx. 86% of wasted drugs)



Introduction:

Household disposal practices

Figure 3.2. Household disposal practices of unused or expired medicine in selected OECD countries



Source: OECD. (2022) Management of Pharmaceutical Household Waste. https://www.oecd.org/en/publications/management-of-pharmaceutical-household-waste_3854026c-en.html



Aims of DISPOSAL Study

- Analyse **functioning of national collection and disposal systems**
- Investigate **how unused and expired medications are disposed of in real-world settings**
- **Identify gaps** between official guidelines and everyday disposal practices
- Explore **public knowledge and behaviour** based on observed patterns, not declarations
- Support **evidence-based, practical policy recommendations** for Europe



Methodology of the **DISPOSAL** Study

- Led by **Medical University of Lodz** (Poland) in collaboration with **Syreon Research Institute** (Hungary)
- Online **expert survey** conducted across **Europe**
- Invited experts included **specialists in healthcare, health policy, pharmaceutical regulation etc.**
- Focus on **real-world systems, practices, and public behaviors**
- **Six key domains** analyzed: legal, logistical, economic, environmental, behavioral, and policy-related



DISPOSAL Study Results

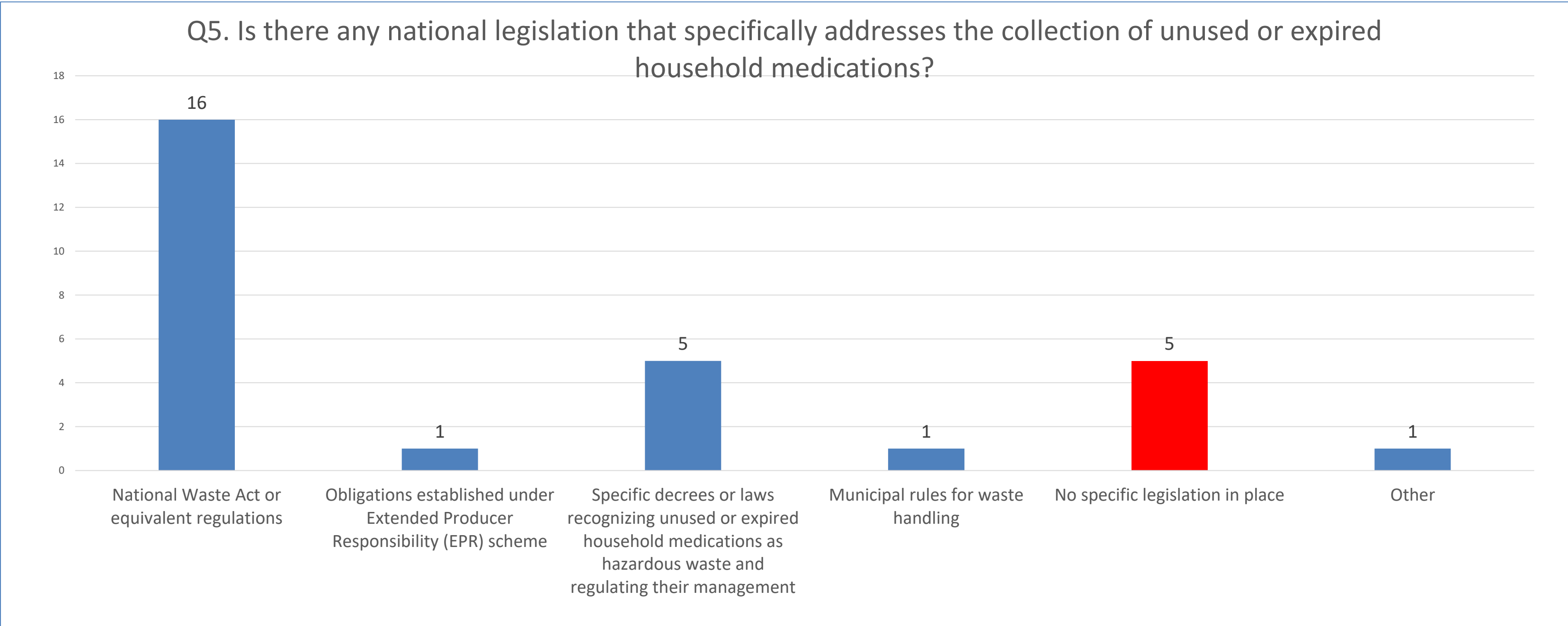


Study Participants – Key Statistics:

- **36 experts** participated in the study so far
- **80%** from healthcare or pharmacy sector
- **8%** from pharmaceutical regulation
- **Majority with 10+ years** of professional experience
- Valid responses from **29 European countries**

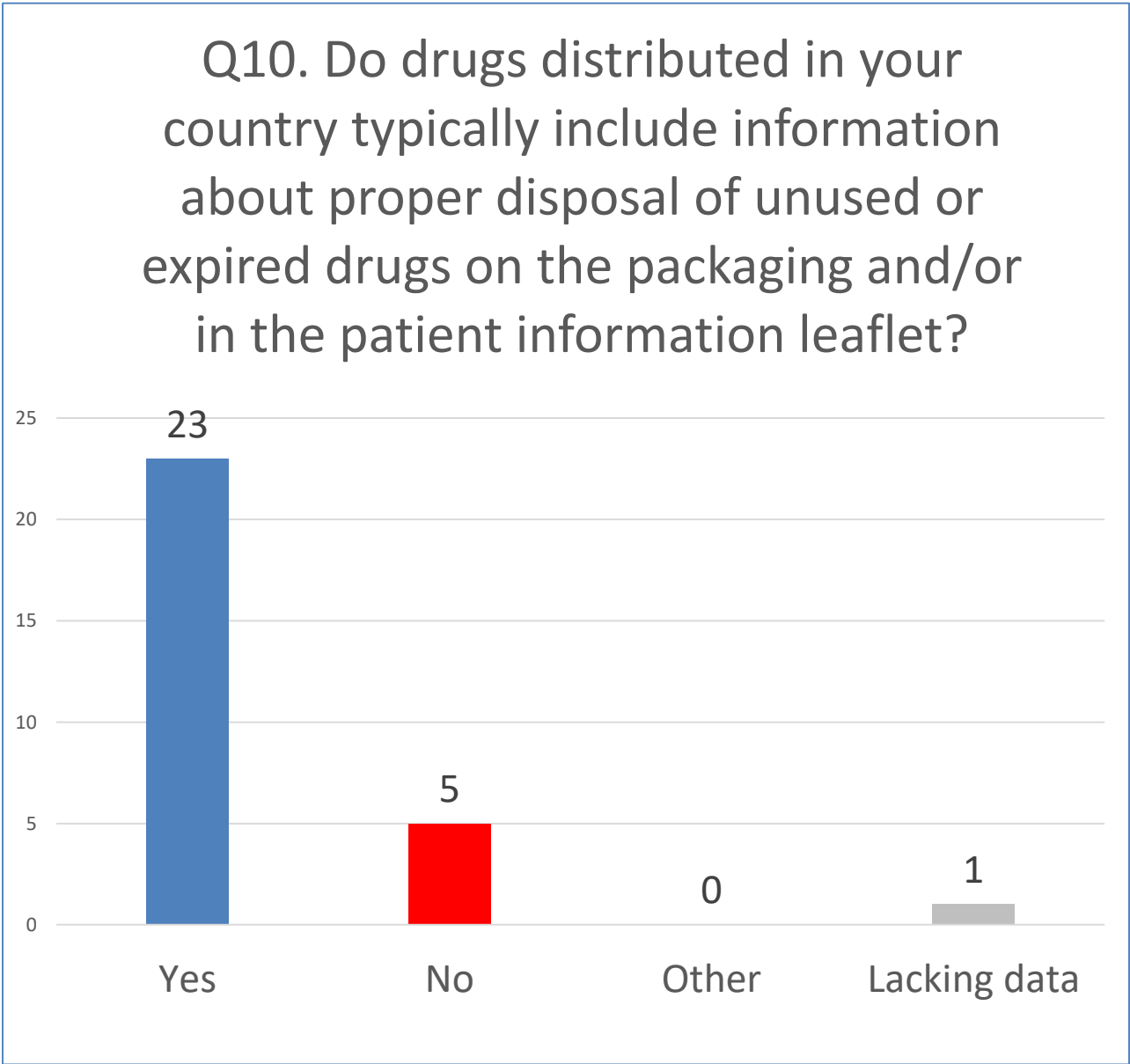
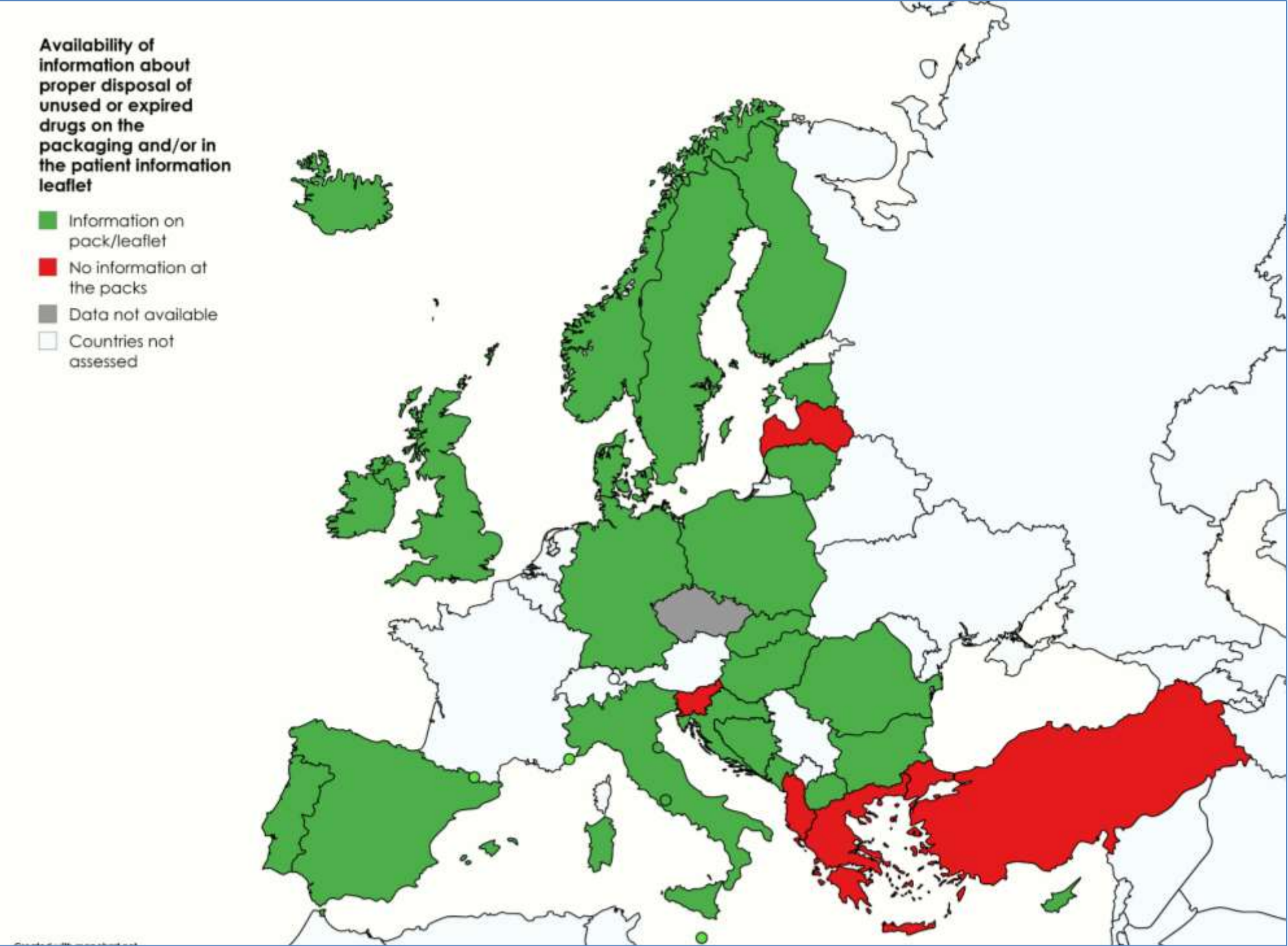


National legislation





Guidance on packs/leaflets



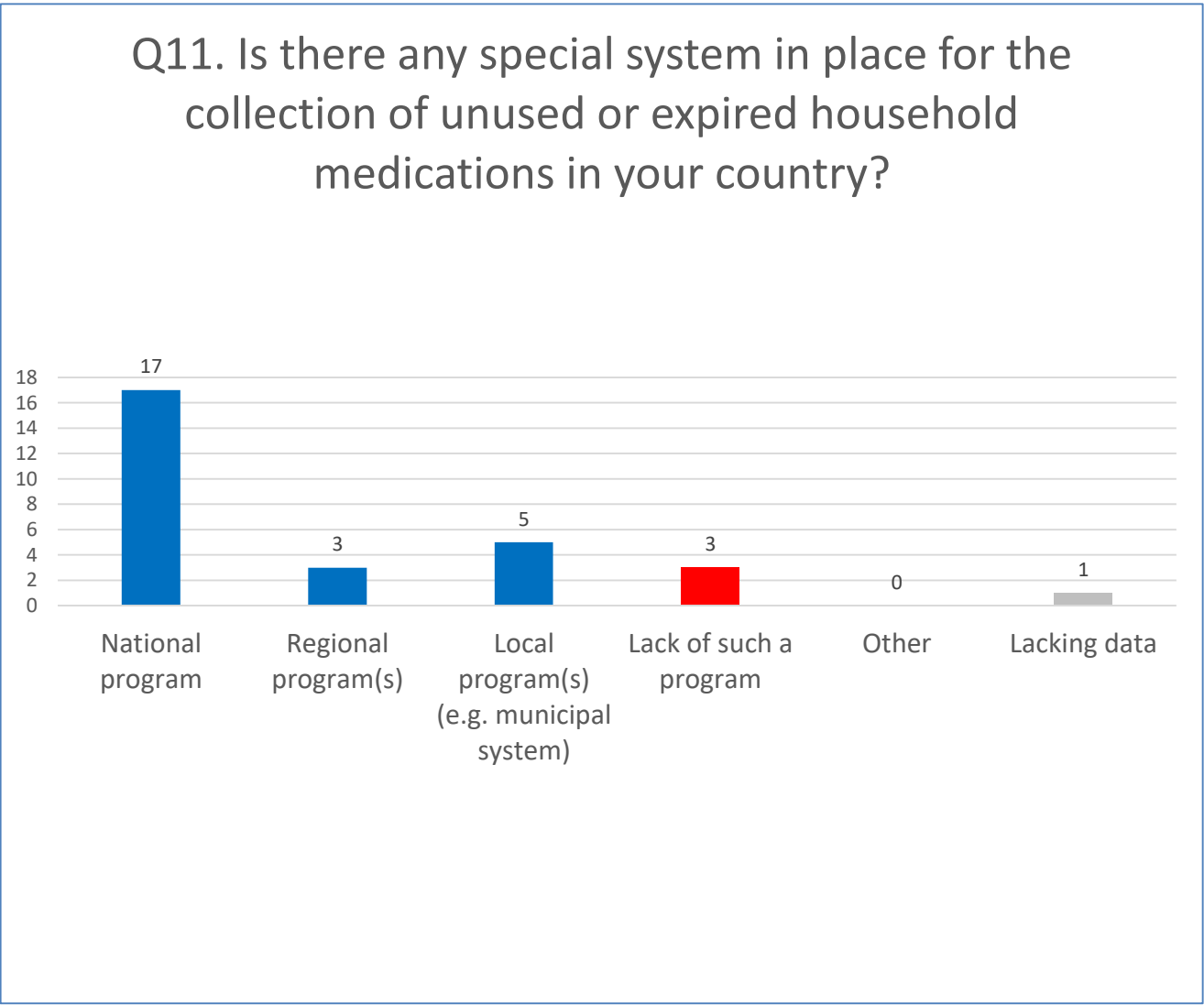
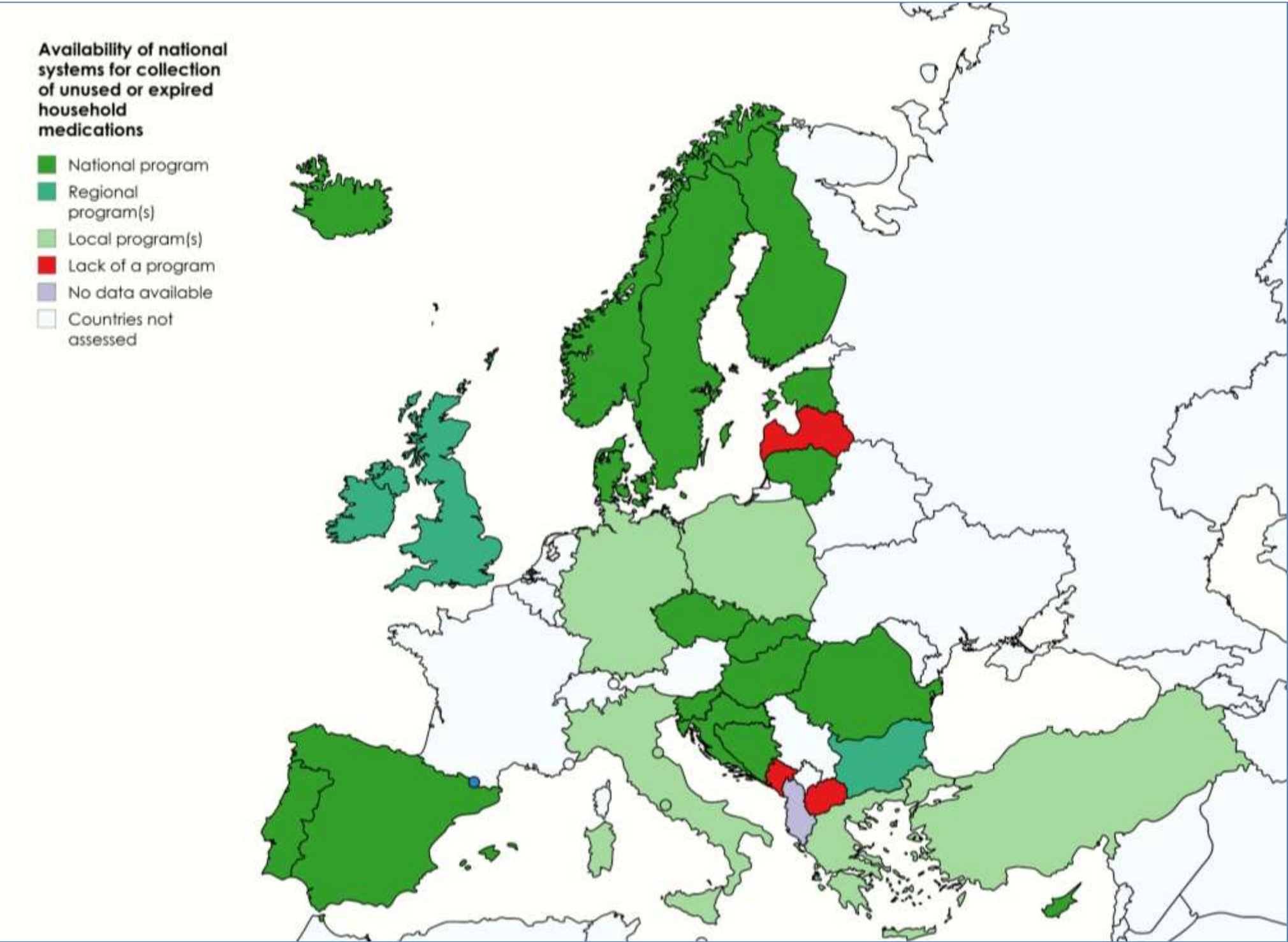


Guidance on packs



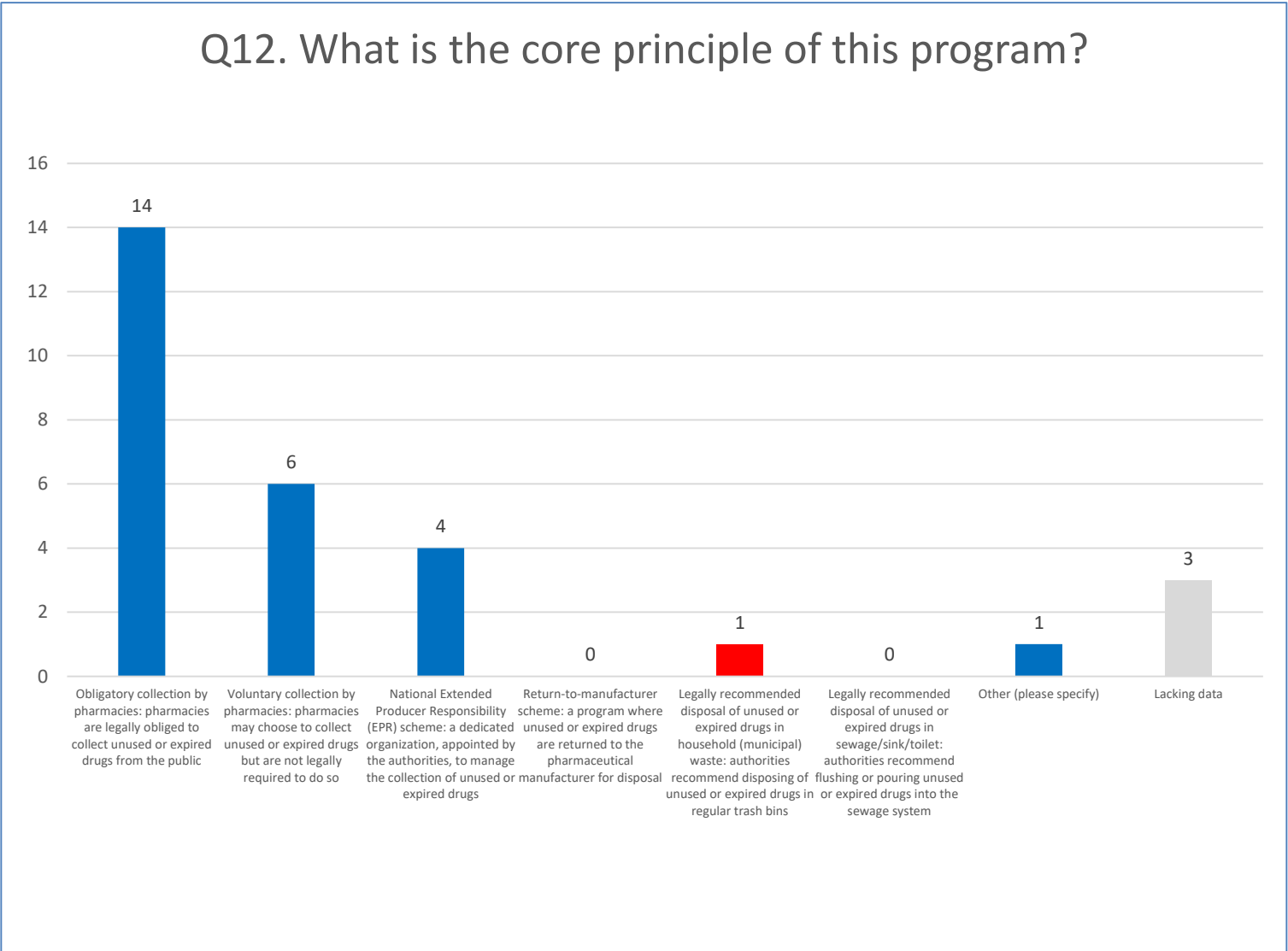
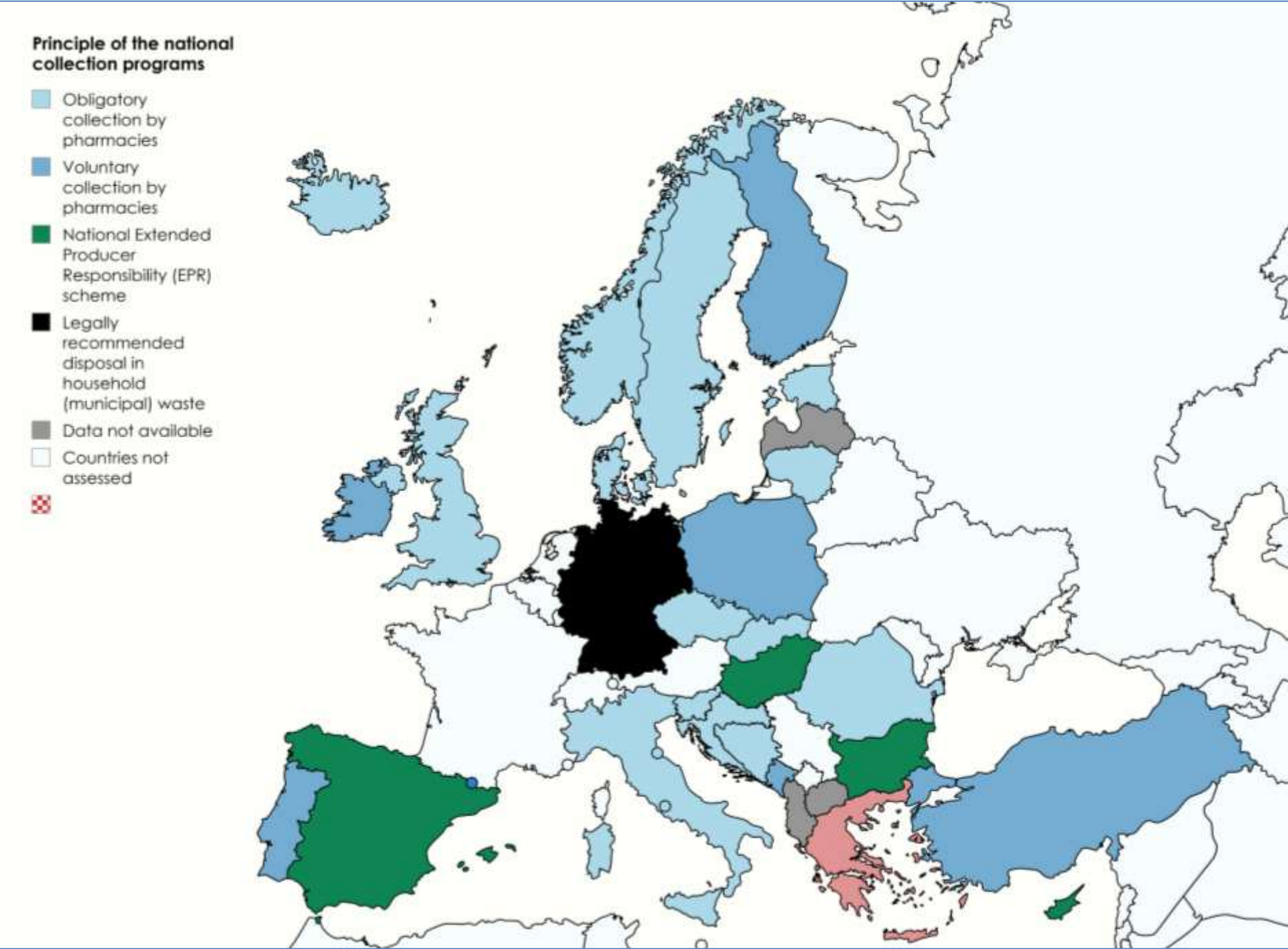


Results: National collection systems





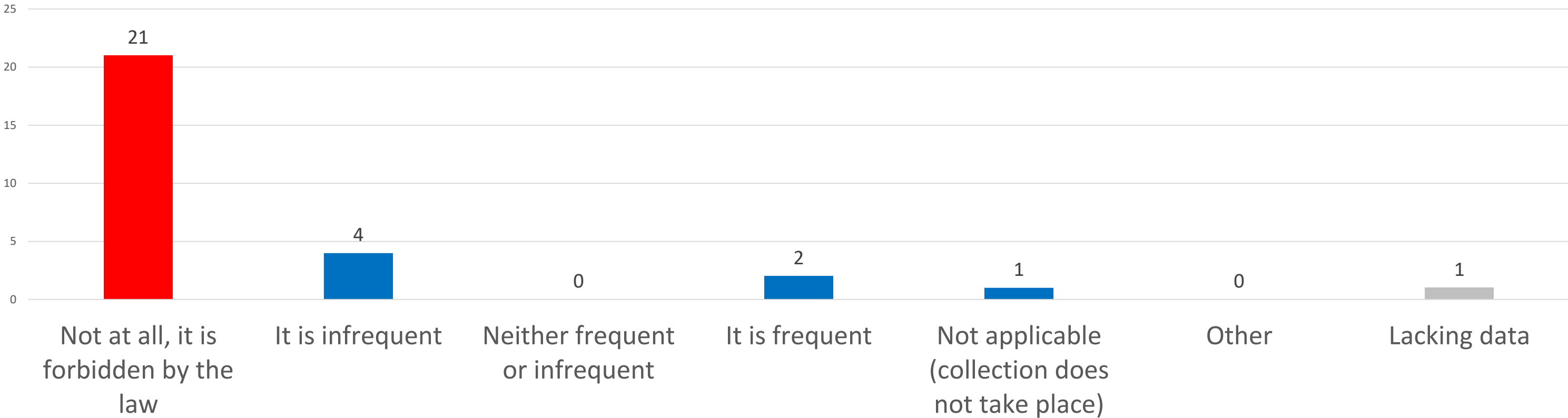
Principles of national collection systems





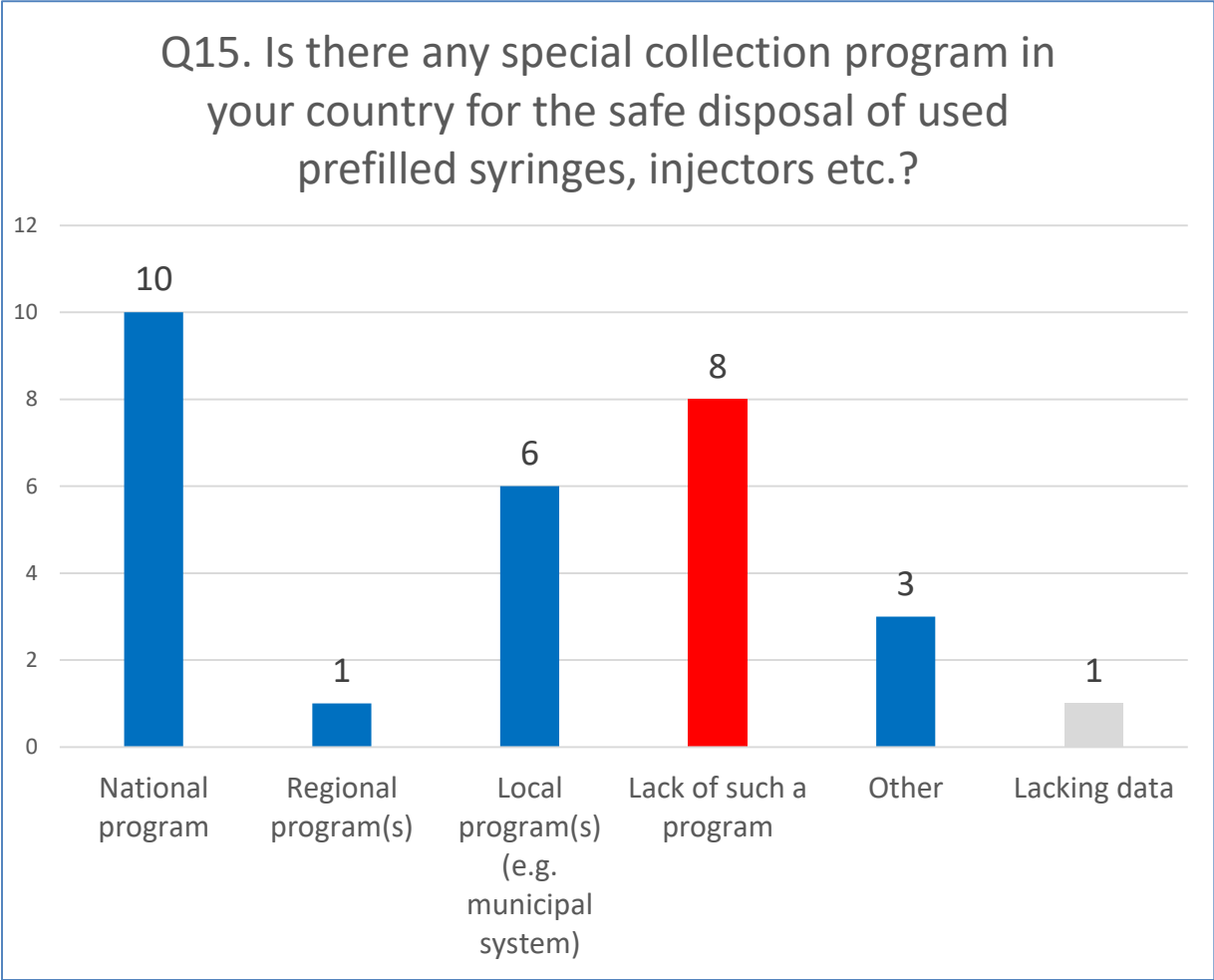
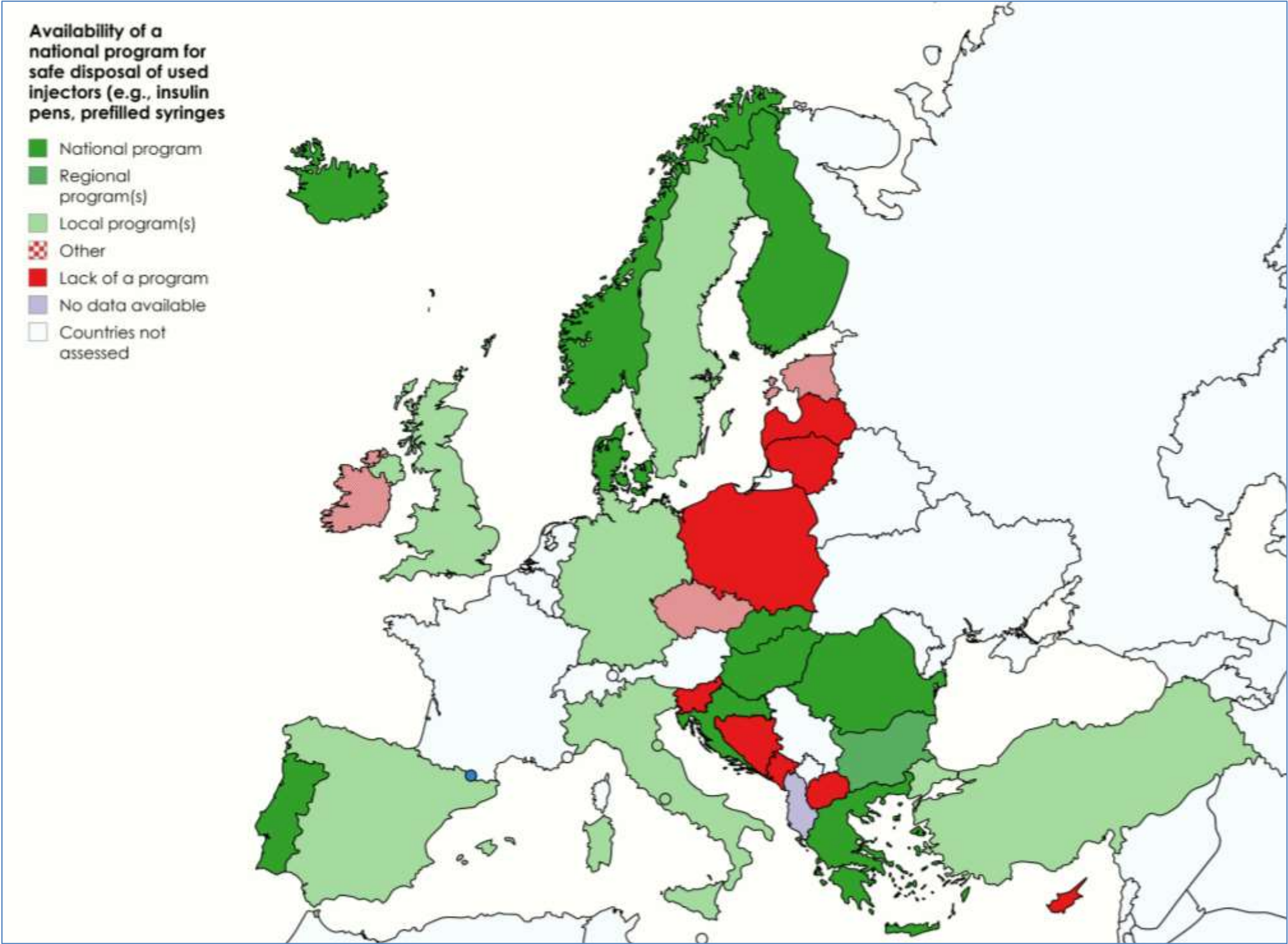
Reuse of unused drugs

Q14. Is the reuse of collected medications (e.g., redistributing unused, unexpired drugs to those in need) a common practice in your country?



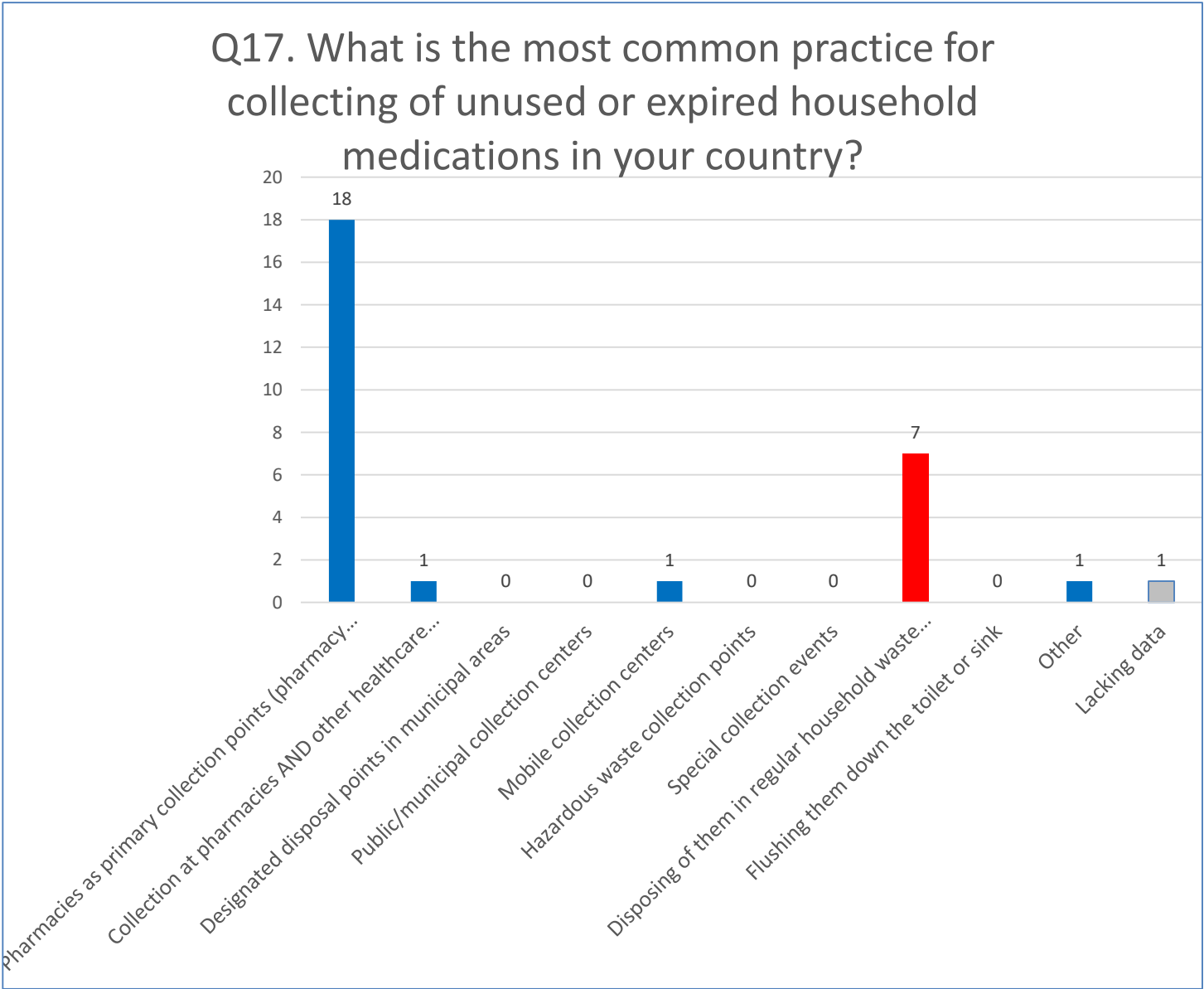
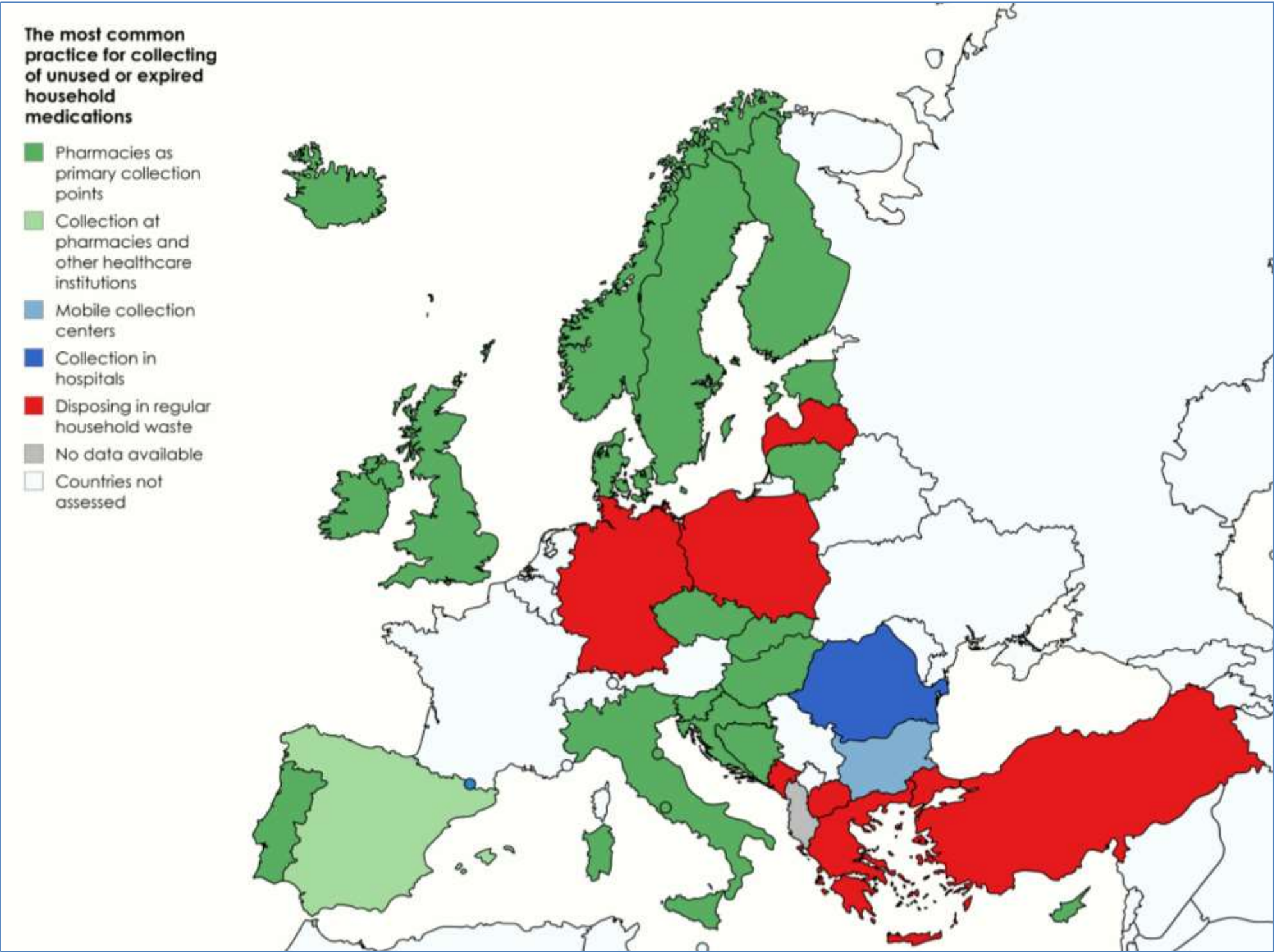


Collection of used injectors



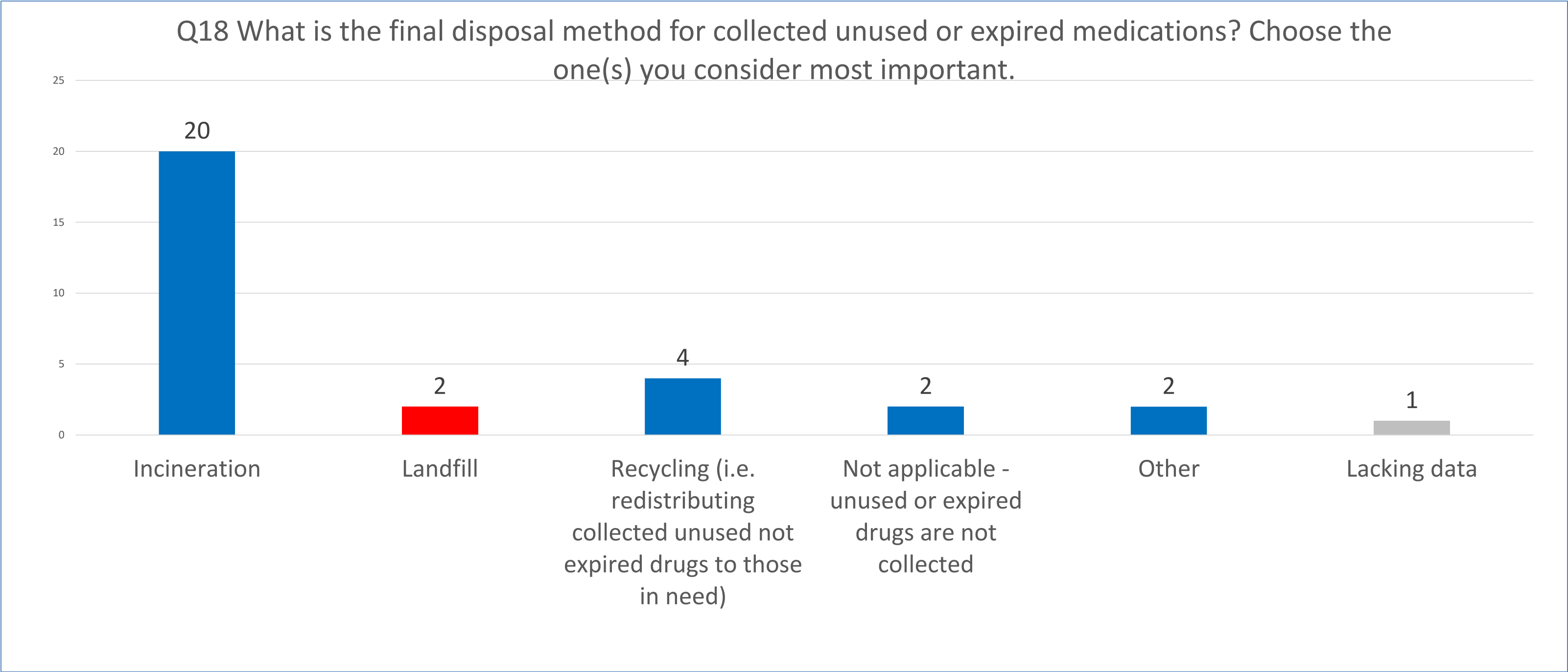


The most common disposal practice





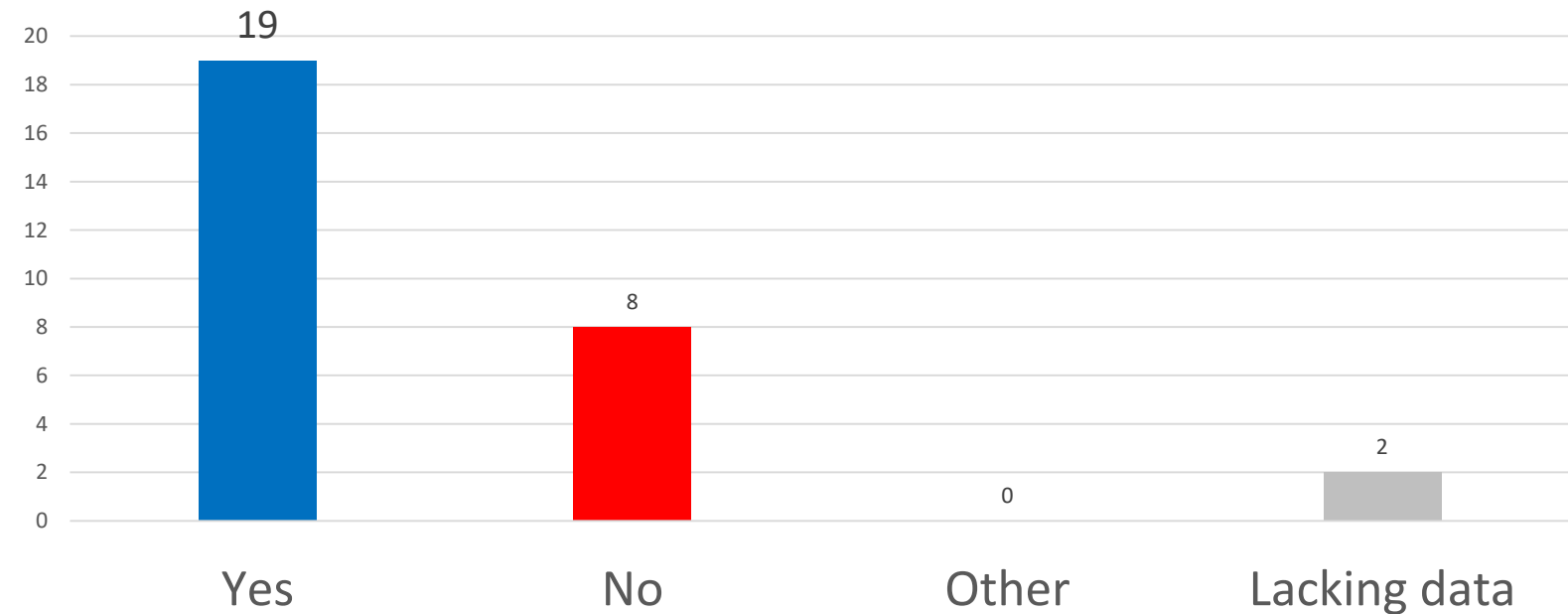
Results



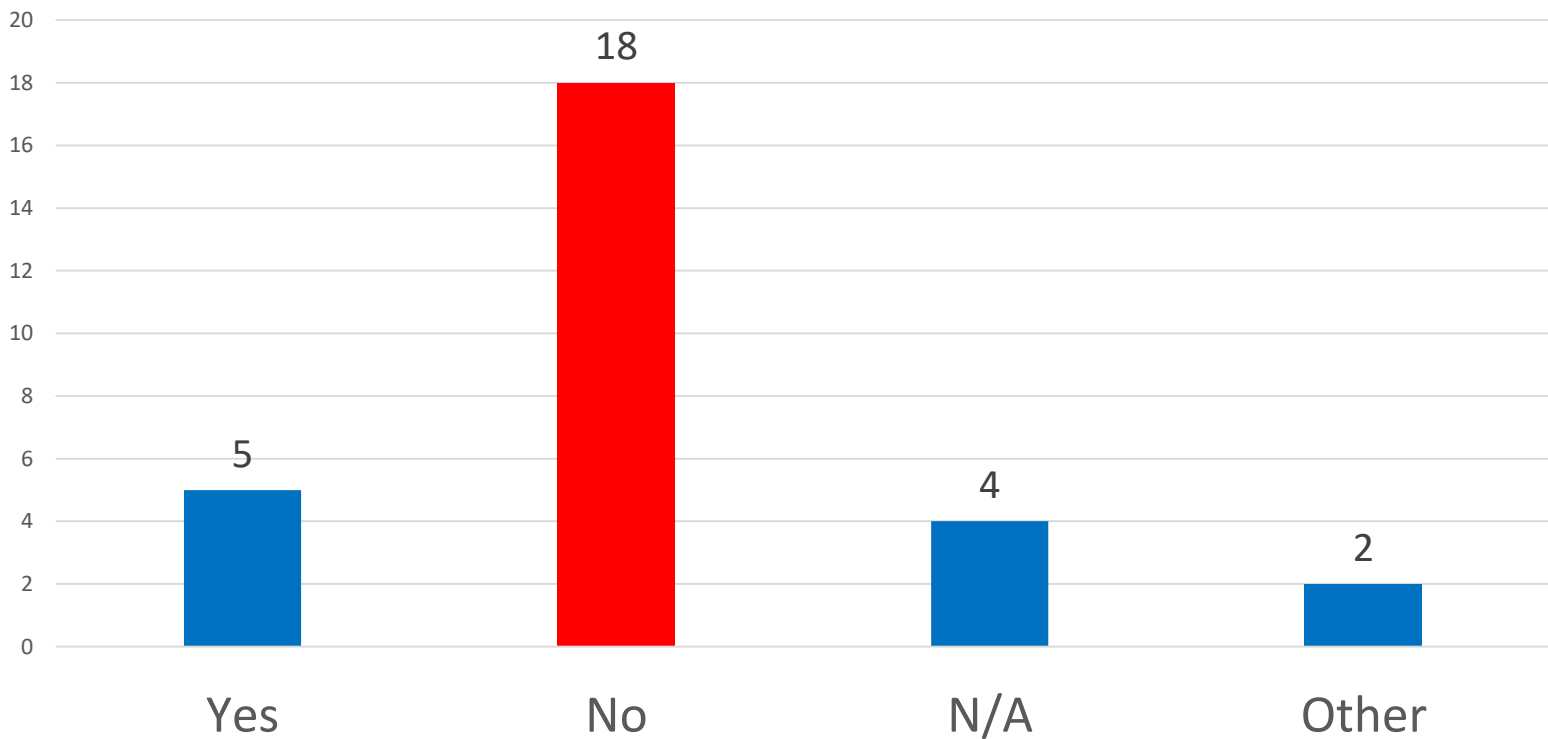


Public awareness campaigns

Q19. In the last five years, have any national or regional public awareness campaigns been organized in your country promoting the proper disposal of unused or expired medications?

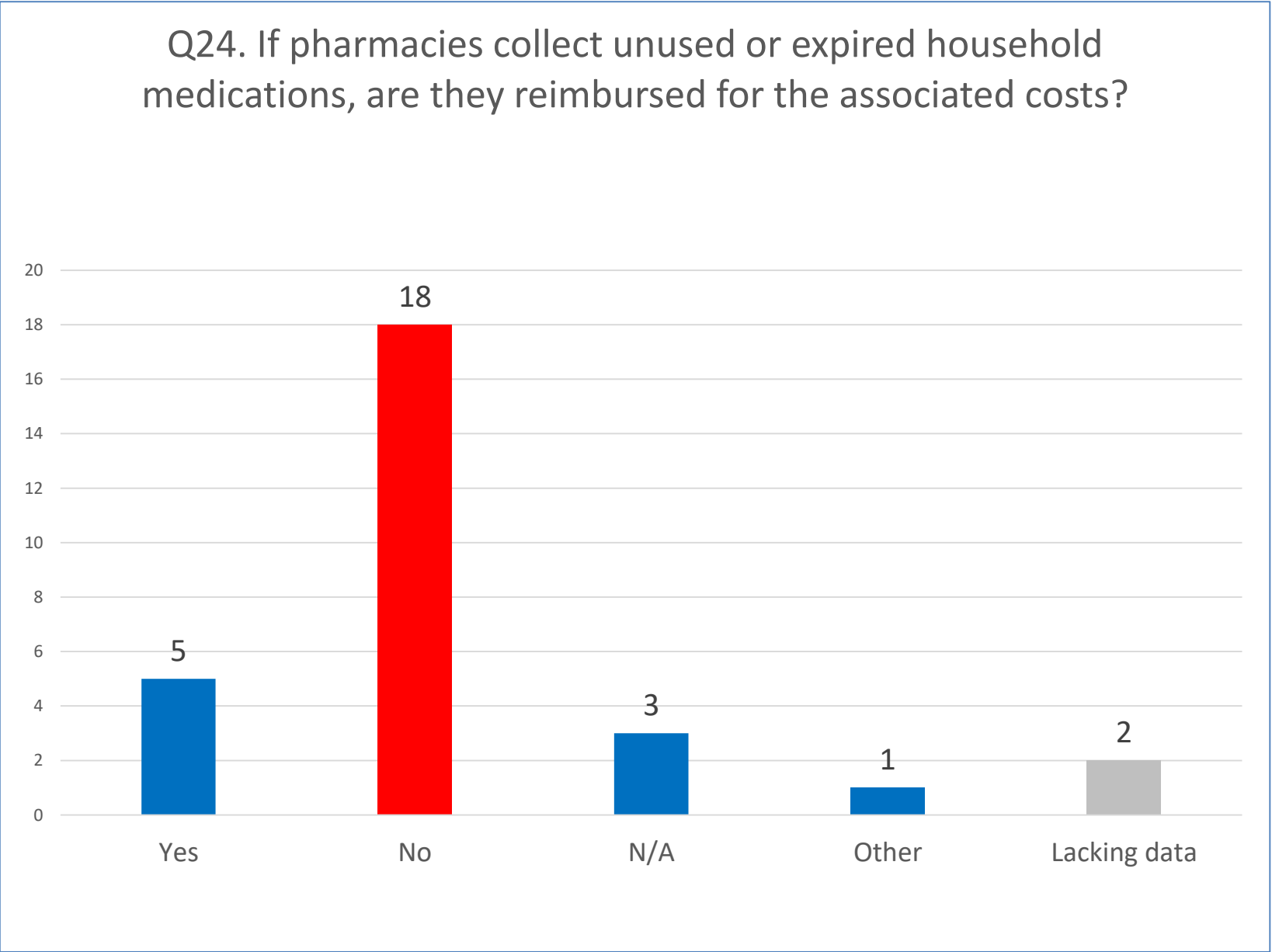
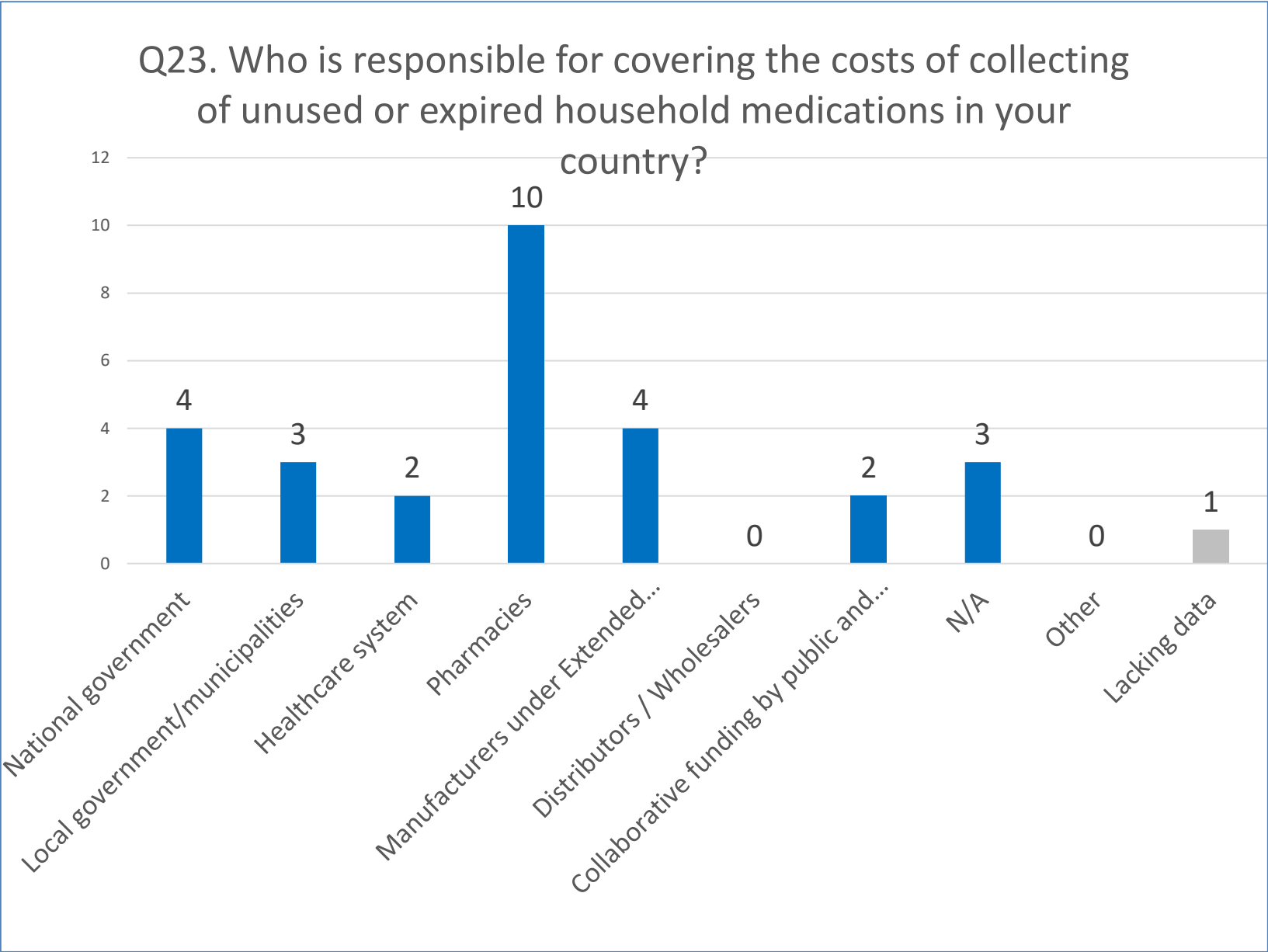


Q21. Have any of these campaigns been evaluated for effectiveness?





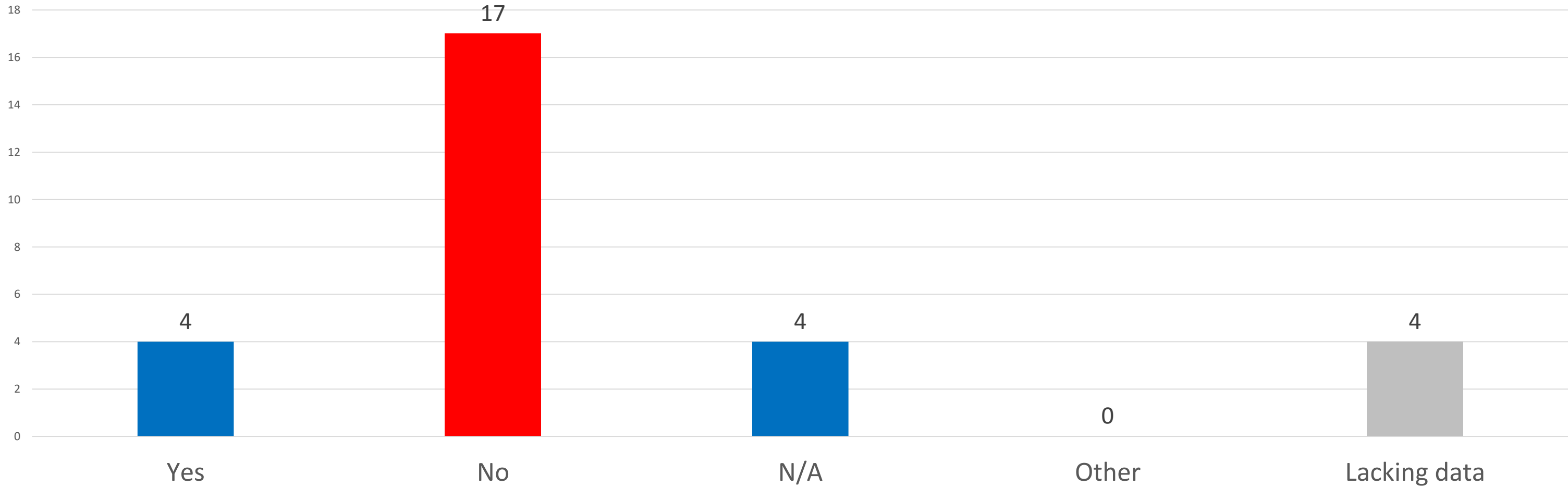
Economic aspects





Monitoring

Q30. Are national statistics available on the reasons for household drug wasted (e.g., expired drugs, medication non-adherence, etc.)?





DISPODSAL Study Conclusions

- DISPOSAL provided valuable insight into **current real-world practices** in medication disposal across EU
- **Significant gaps exist** between medication waste generation and collection capacity
- **Current real-world practices** in medication disposal across Europe remain inconsistent
- **Public awareness and infrastructure barriers** hinder proper medication disposal
- **Harmonized regulations and clearer public guidance** are urgently needed
- Strong expert consensus supports the need for EU-level policy improvements



Next step: Call for action



Minimizing the Ecological and Economic Burden of Medication Waste in Europe

The Brussels Declaration on the Responsible Disposal of Unused and Expired Medications in Europe

We, the European experts gathered in Brussels on Thursday, June 26th, 2025, for the scientific symposium titled *Minimizing the Ecological and Economic Burden of Medication Waste in Europe*, hereby issue a formal call to improve the management of unused and expired medications across the European Union.

Drawing upon the latest scientific evidence, policy analyses, and shared best practices, we underline the urgent need for coordinated action to mitigate the environmental damage, economic inefficiencies, and safety risks resulting from improper disposal of household medications.

We call upon the European Commission, Member States, national regulators, and all relevant stakeholders to adopt the following three-pronged strategy:

1. Launch Coordinated Awareness Campaigns Targeting Patients and Citizens

Public awareness remains critically low across much of Europe regarding the correct disposal of unused and expired medications. We urge Member States to invest in and coordinate national and EU-wide information campaigns that:

- Clearly explain how to dispose of medicines safely; of improper disposal;
- Encourage the return of unused medicines to designated points, such as community pharmacies

These campaigns must be culturally adapted, visible, and sustained over time to change behaviours at scale.

2. Introduce Clear and Standardized Graphical Symbols on Medicine Packaging

We call for the implementation of intuitive, easy-to-understand visual symbols on all medication packaging, supported by EU-wide regulatory guidance. These symbols should convey essential instructions such as:

- "Do not dispose of in household waste"
- "Return unused medicines to your pharmacy"

Such standardization will ensure that patients across Europe receive consistent and understandable guidance, regardless of language or literacy level.

3. Develop National Information Platforms for Safe Disposal Guidance

Each Member State should establish and maintain a user-friendly, accessible digital platform — such as a website or mobile app — providing citizens with:

- Up-to-date lists of local return points (e.g., pharmacies, municipal collection sites, etc.);
- Clear instructions on what can and cannot be returned;
- Practical explanations of the risks associated with improper disposal.

These national platforms should be promoted through healthcare providers and public campaigns, and coordinated at the EU level to ensure consistency and interoperability.

As experts from the fields of public health, pharmacology, environmental science, waste management, health policy, and the pharmaceutical industry, we stress that the time for action is now. The evidence is clear: improper disposal of medicines is widespread, harmful, and avoidable.

We urge European and national authorities to act decisively and collaboratively to ensure that the lifecycle of medications ends in a manner that protects both human health and the environment.

For a healthier, safer, and more sustainable Europe — this change is both necessary and achievable.

Done at Brussels, on 26 June 2025





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Thank you!



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www.zmr.lodz.pl/en/reducing-medication-waste

