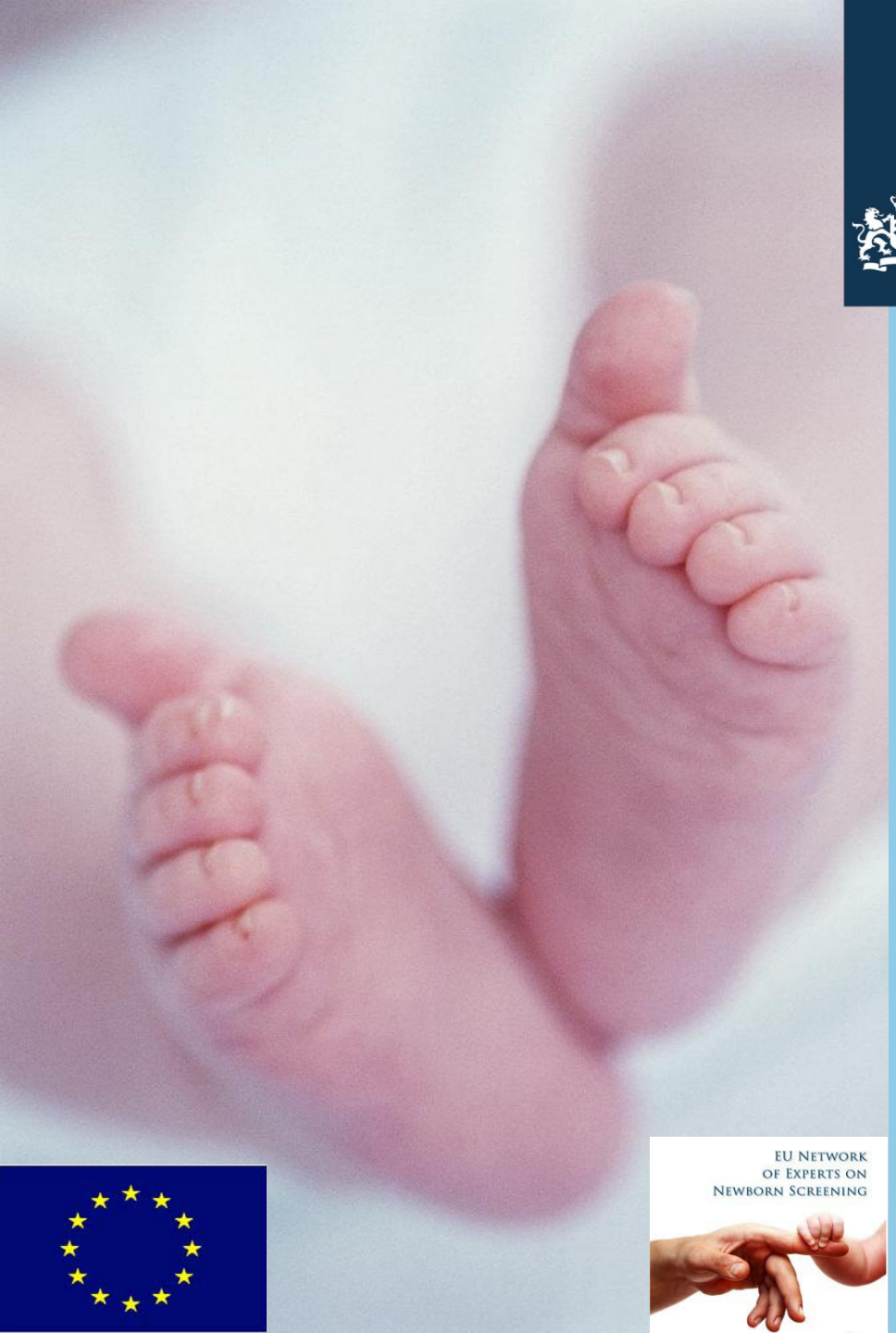


Rijksinstituut voor Volksgezondheid
en Milieu
*Ministerie van Volksgezondheid,
Welzijn en Sport*

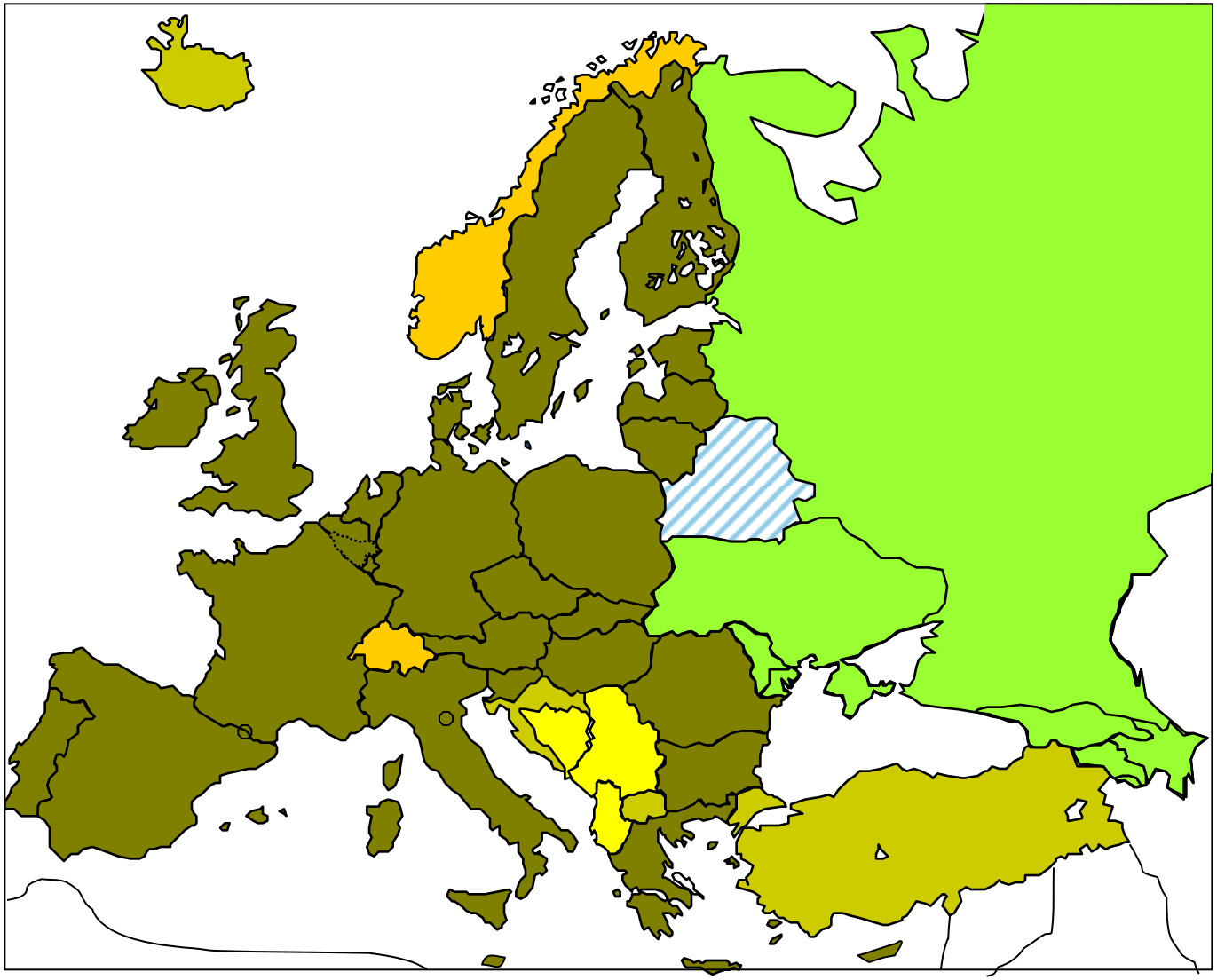
Newborn screening programs in Europe

arguments and efforts regarding harmonization

J.Gerard Loeber

APHL, San Diego, Nov 10, 2011

What is Europe?



Council of Europe member countries

Europe struggles ….
and not only about the Euro!!!

Decisions in EU treaties

- Health care issues are in principle left to the member states
- EU is reluctant concerning health care policy making
- Consequently,
  - Every country has its own health care system
  - Every country has its own NBS policy
  - Every country has its own panel of conditions, sampling, treatment etc.

- Some countries are further subdivided in regions/provinces/länder with their own policies

EN

Official Journal of the European Union

COUNCIL RECOMMENDATION

of 8 June 2009

on an action in the field of rare diseases

(2009/C 151/02)

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:151:0007:0010:EN:PDF

EU Council recommendations to EU Commission

- Rare disorders (prevalence < 1:2000)
- Make inventories of current situation
- Identify and stimulate research
- Create centres of expertise and reference networks
- Empower patients organisations
- Produce by end of 2013 an implementation report
- A European body for health technology assessment will be developed (EUnetHTA)

EXECUTIVE AGENCY FOR HEALTH AND CONSUMERS

Health Unit

EAHC
Executive Agency
for Health and Consumers
18 JUIL. 2009
LUXEMBOURG

Luxembourg,
EAHC D (2009)

Subject: **Call for tender n EAHC/2009/Health/09 concerning evaluation of population newborn screening practices for rare disorders in Member States of the European Union**

Contract notice 09/S 136-198073 of 18/07/2009

http://ec.europa.eu/eahc/documents/health/tenders/EAHC_2009_health_09_invitation_en-1.pdf

EU Tender, project group

- **Luciano Vittozzi**, Domenica Taruscio (ISS, Rome, Italy)
  - Project leader, logistics
- **Martina Cornel**, Tessel Rigter, Stephanie Weinreich (VUmc, Amsterdam, Netherlands)
  - Governance
- **Gerard Loeber** (RIVM, Bilthoven, Netherlands)
  - Screening (blood sampling, assays, reports, storage)
- **Georg Hoffmann**, **Peter Burgard**, Kathrin Rupp (Univ. Heidelberg, Heidelberg, Germany)
  - Confirmatory diagnostics, treatment

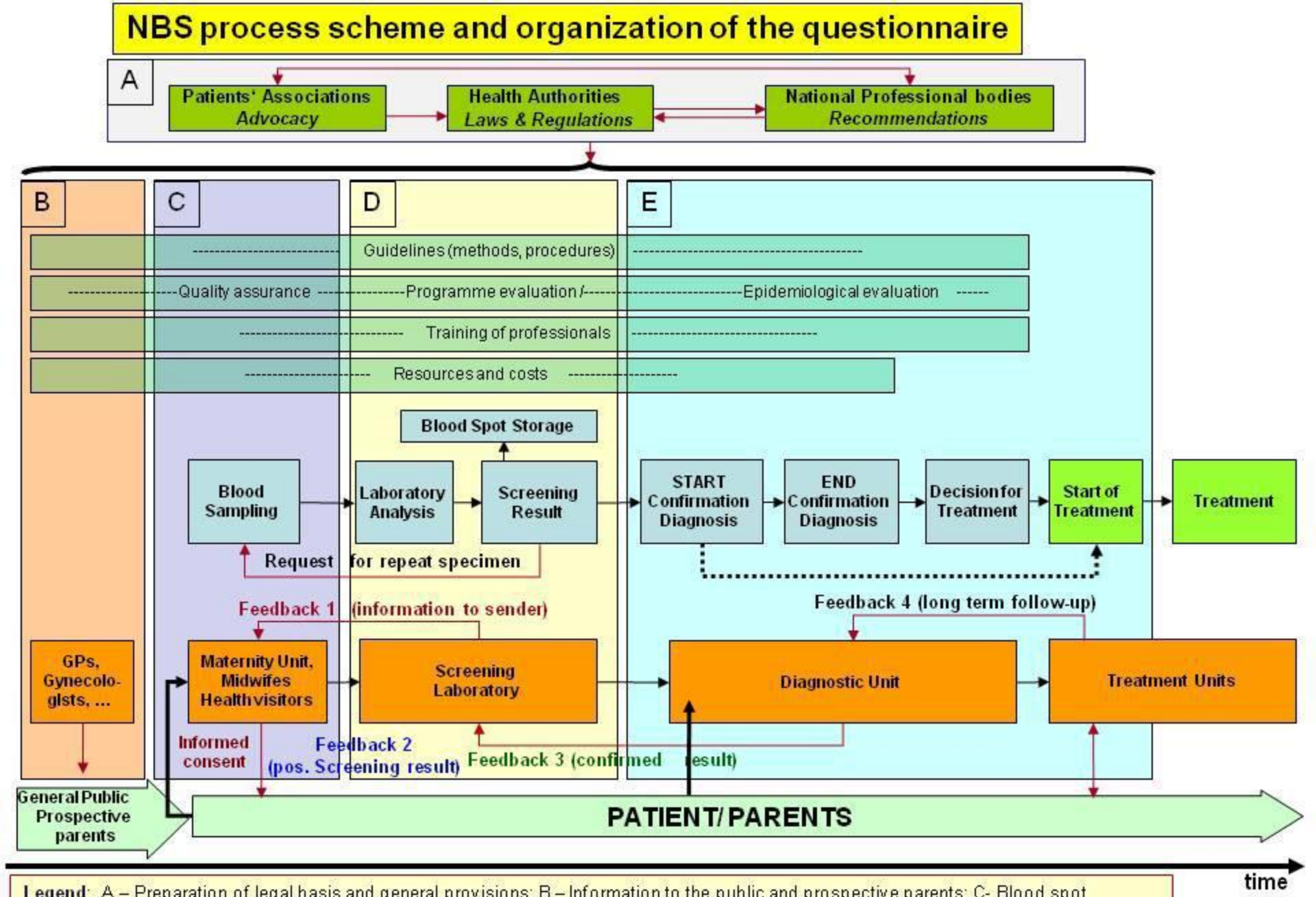
EU Tender deliverables, period Jan 2010-July 2011

- **Report on the current practices** of NBS for rare disorders implemented in all Member States

- **Expert opinion document with recomendations**, including decision-making matrix, on the development of European policies in the field of newborn screening for rare diseases

- **EU Network of Experts** on NBS (EUNENBS)

NBS process scheme and organization of the questionnaire



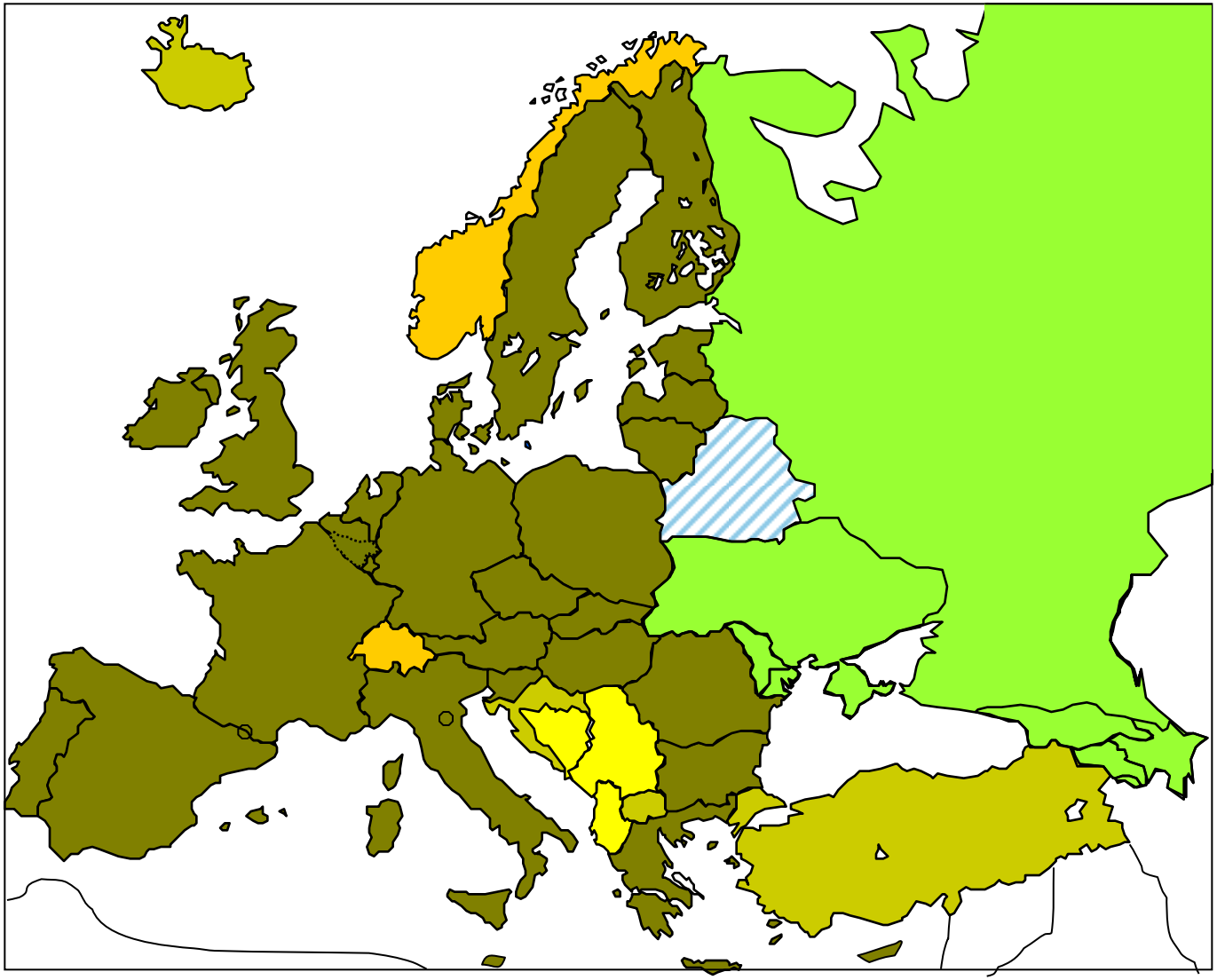
Legend: A – Preparation of legal basis and general provisions; B – Information to the public and prospective parents; C- Blood spot sampling and informed consent; D - Laboratory testing and blood spot storage; E – Diagnosis confirmation, diagnosis communication and treatment; → Information flow; ➞ Sample or patient flow

21.05.2010 EU NETWORK OF EXPERTS ON NEWBORN SCREENING: P Burgard, M Cornel, GF Hoffmann, M Lindner, JG Loeber, K Rupp, L Vittozzi, S Weinreich

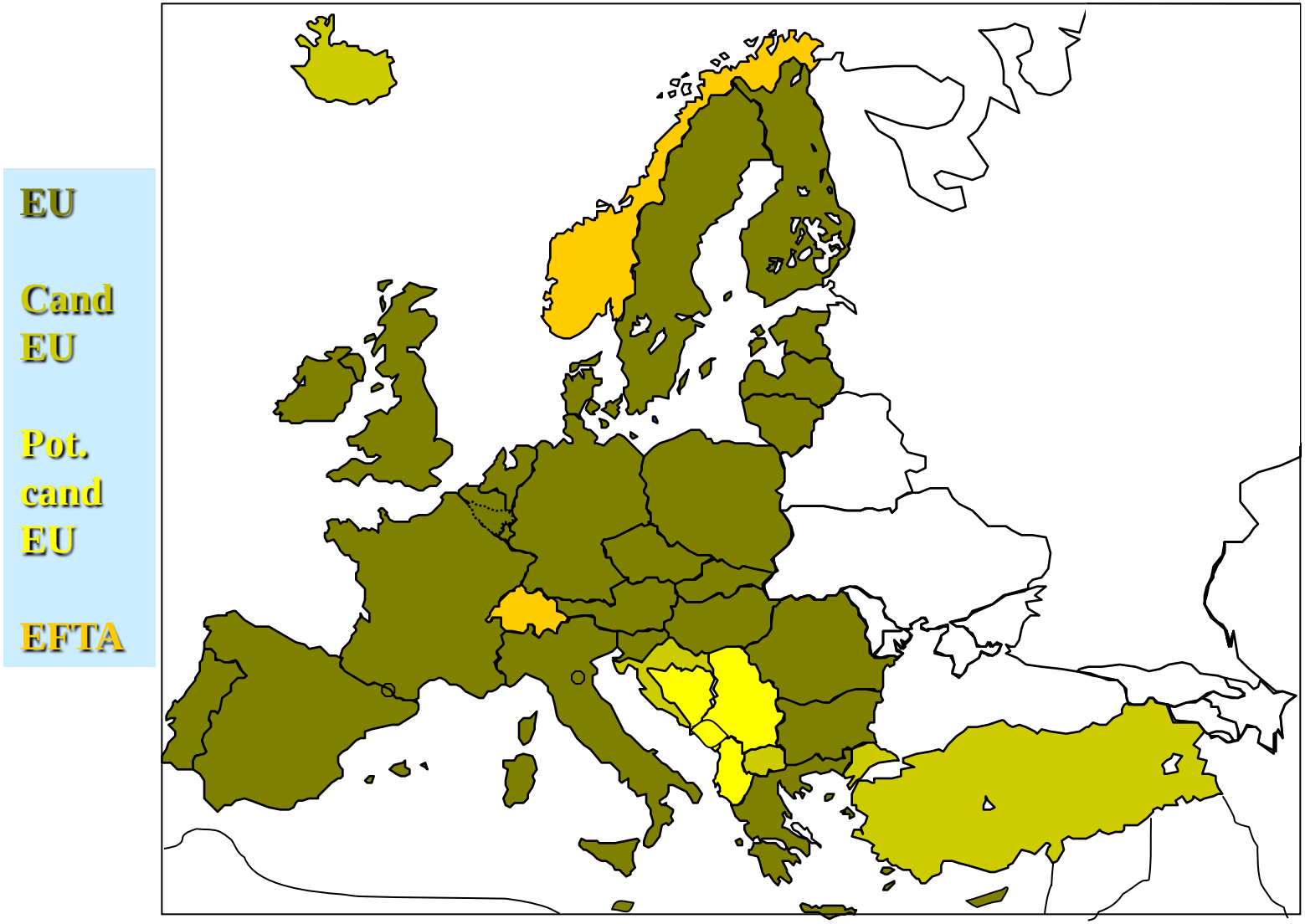
Results

Part 1 Countries included

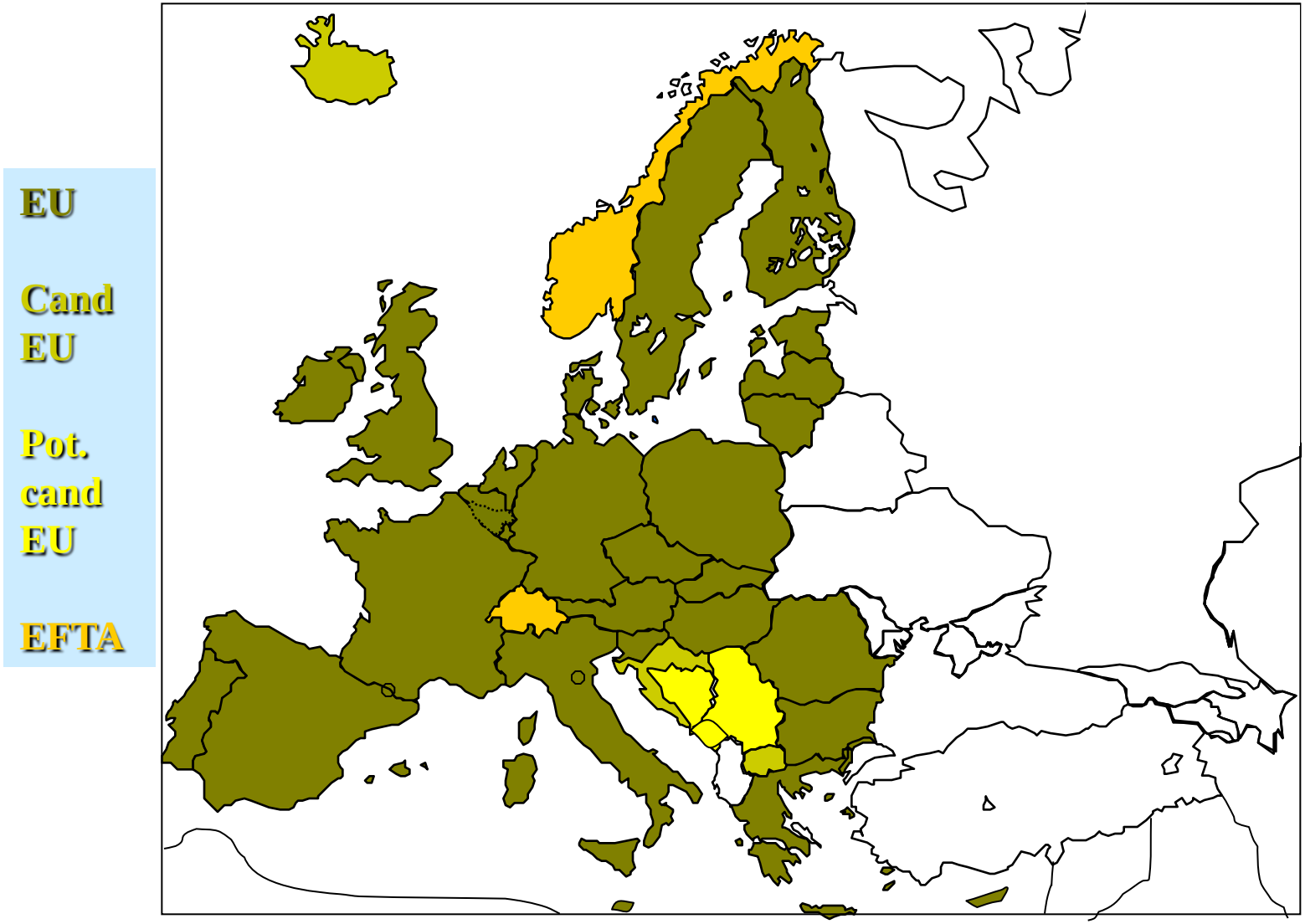
What is Europe?



Council of Europe member countries



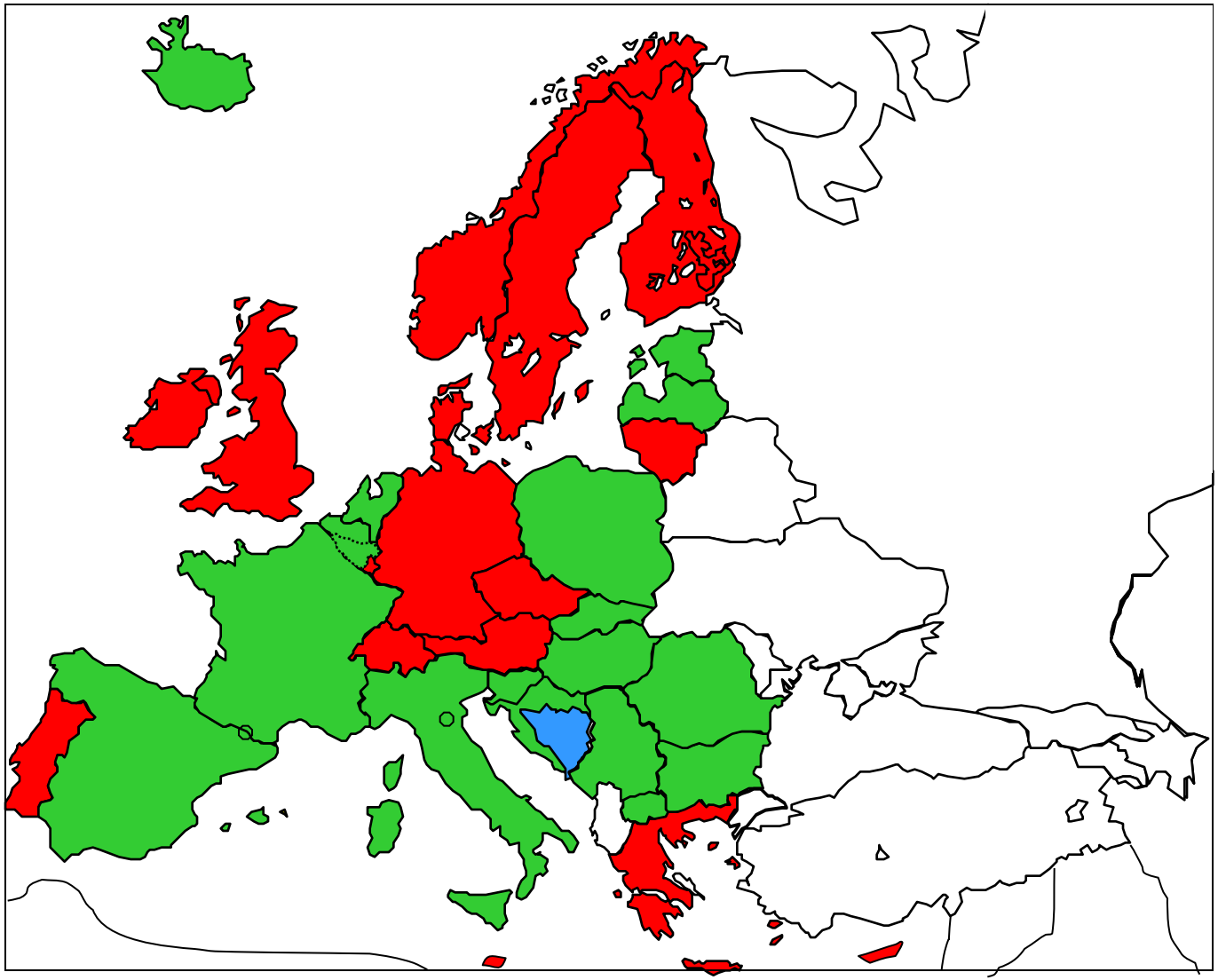
"Other" countries excluded



No replies from Albania, Kosovo, Turkey

Part 2 Governance, Information, Informed Consent

NBS “mandated” by law/regulation



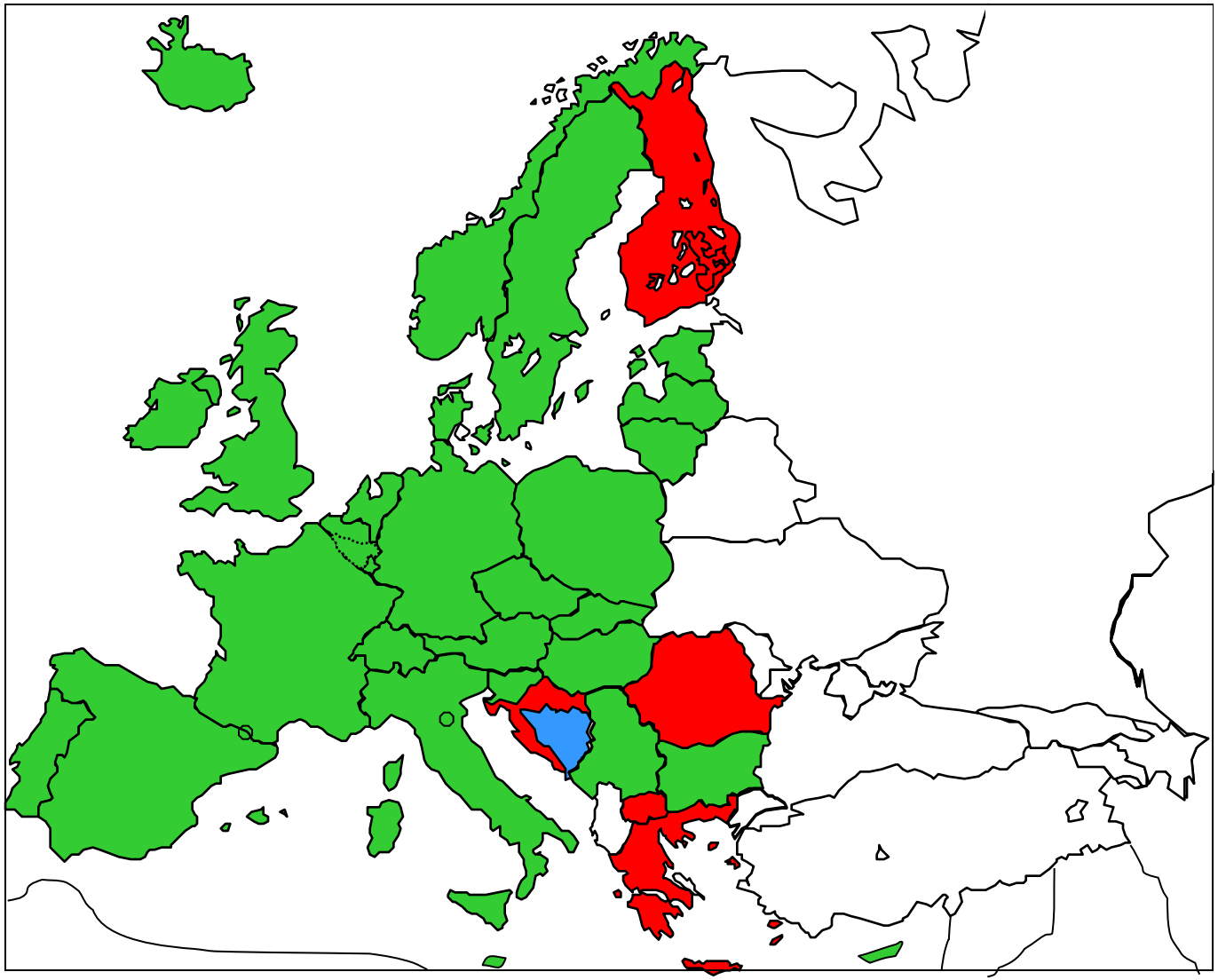
yes no no data

Expert Opinion Document - Recommendations

GOVERNANCE

- Create a European NBS body under *EUnetHTA*
- This body can act as a central point for national NBS bodies
- This body can advise the national policy makers directly or via the national NBS bodies
- This body should involve organisations of parents, clinical and laboratory professionals and consult with industry

Existence of policy to inform prospective parents



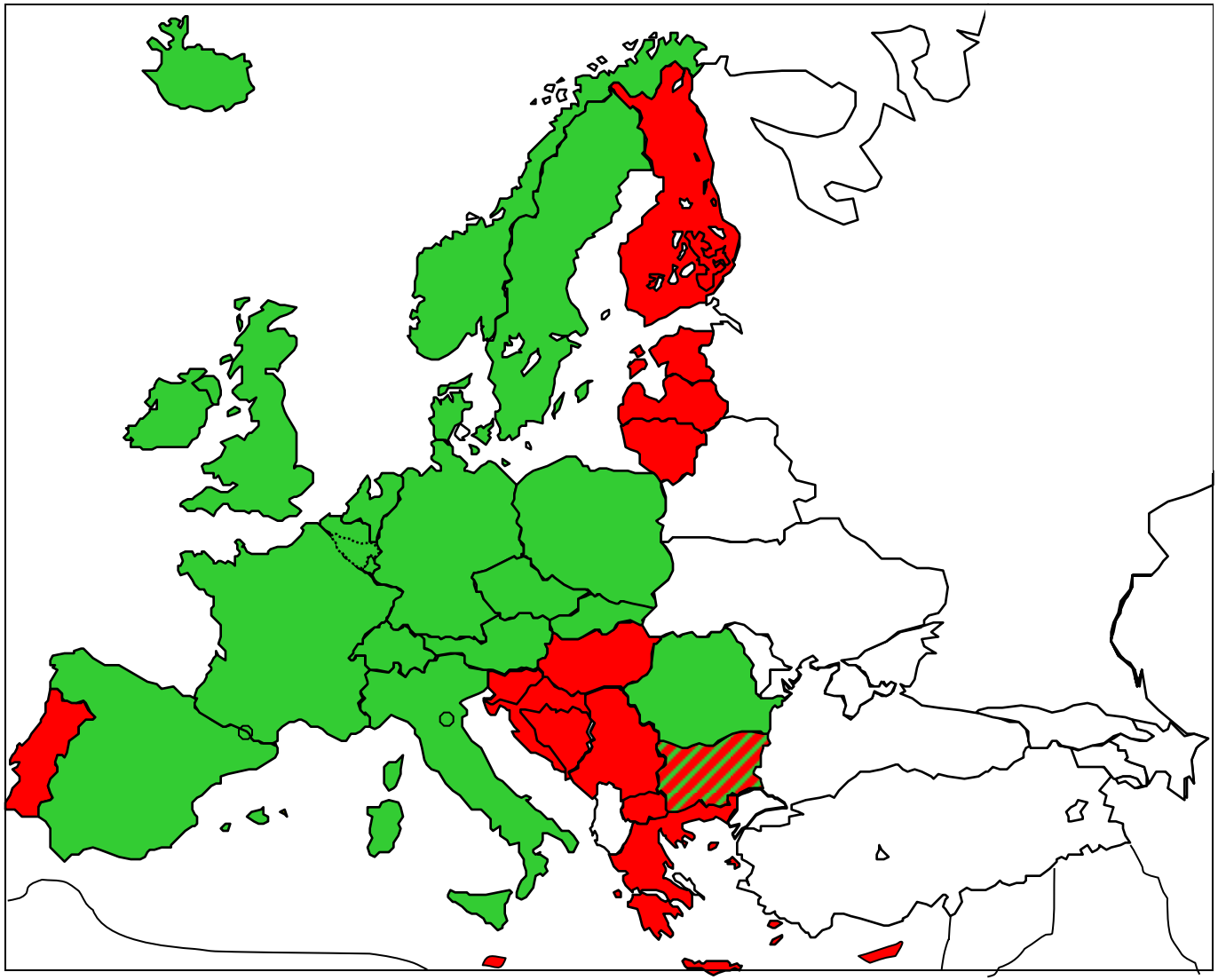
yes no no data

Expert Opinion Document - Recommendations

INFORMATION

- Information to professionals prior to start of screening is necessary
- Information to parents before or during pregnancy, in general or more in-depth if needed
- Information should be made available via the internet in the appropriate language(s)

Informed consent for participation



yes

no

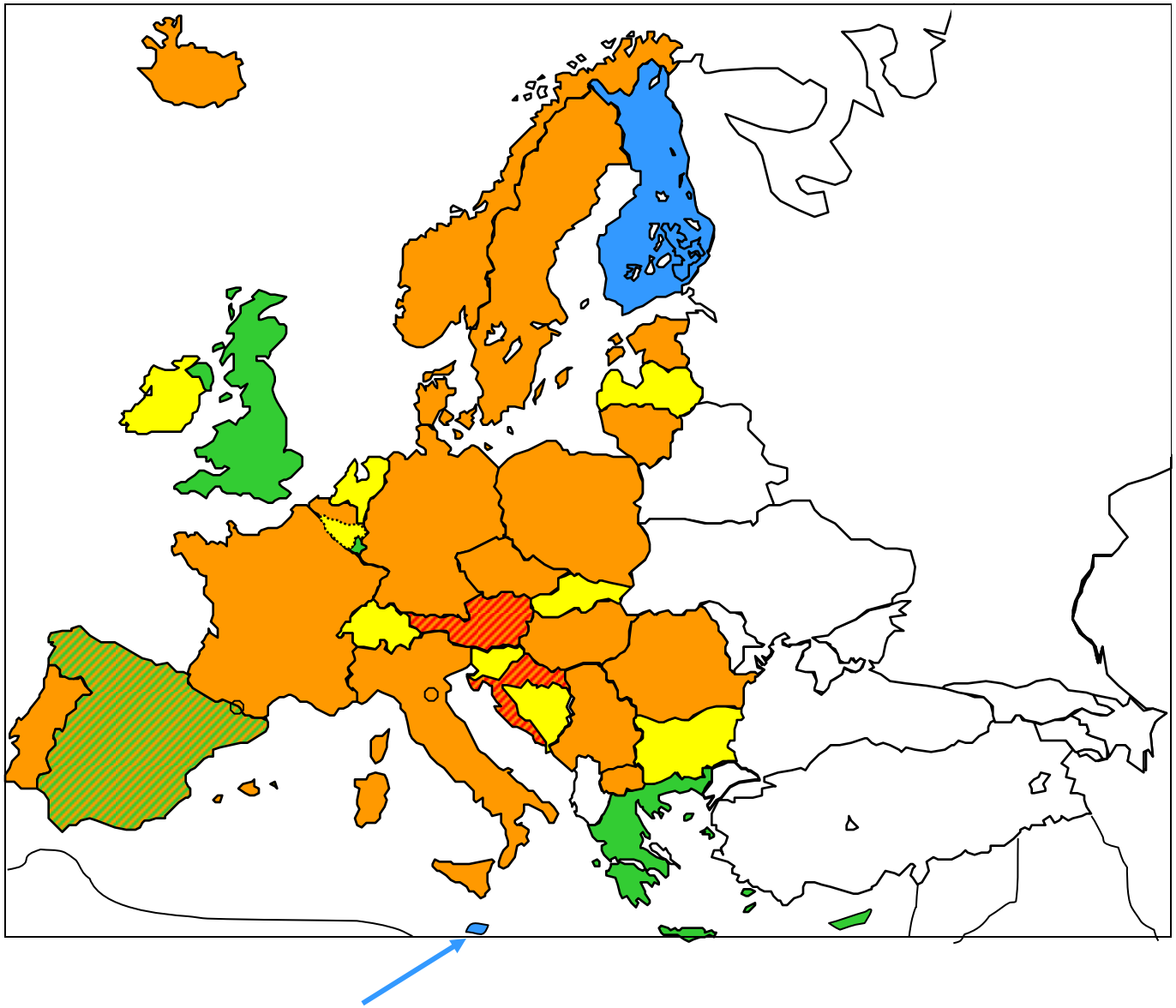
Expert Opinion Document - Recommendations

INFORMED CONSENT

- NBS must be offered to all infants in the EU, taking into account legal provisions
- Health care system should cover the costs
- Participation is voluntary, possibility to opt out
- Informed consent protocols must be available
- Specific consent for research purposes

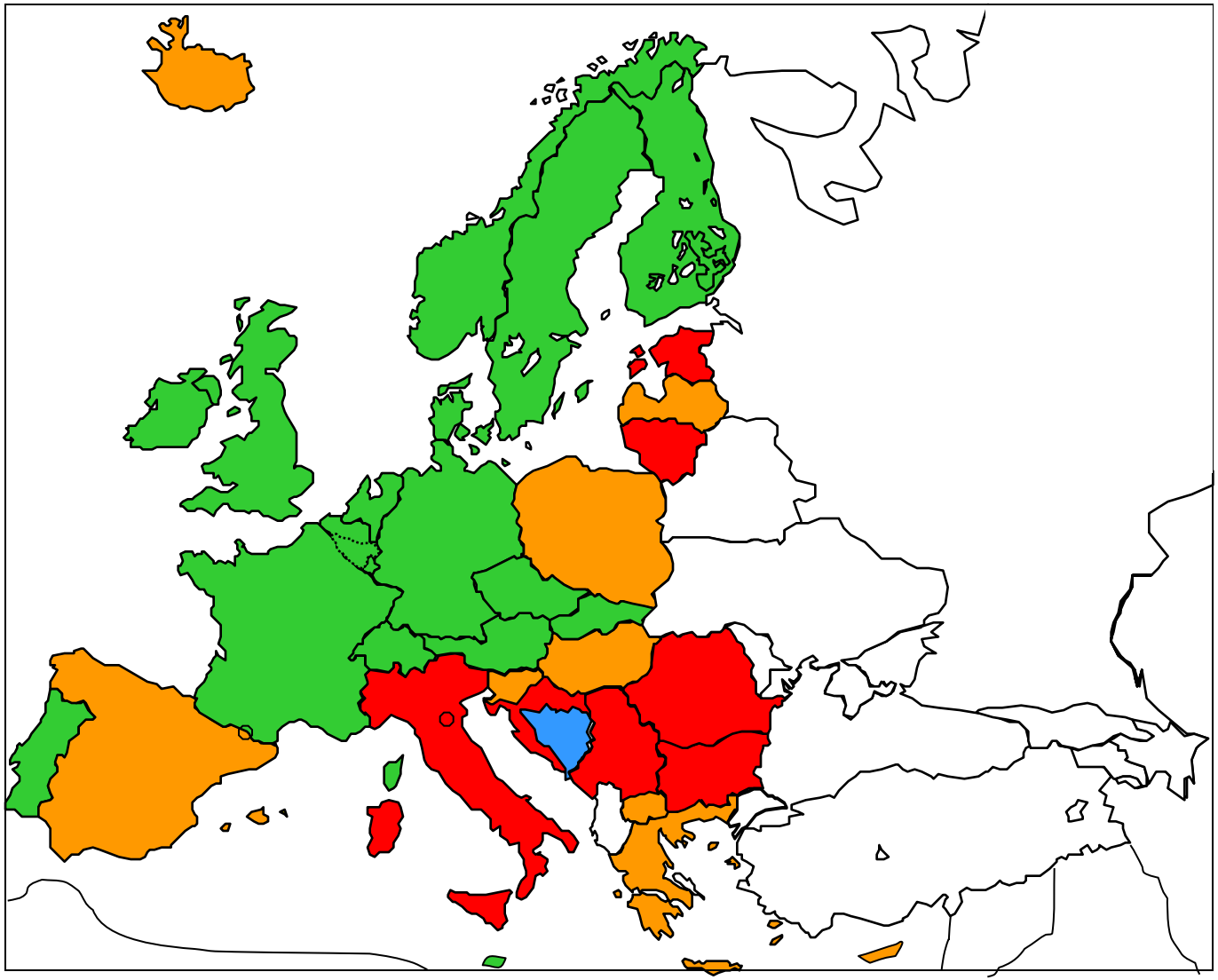
Part 3 Blood sampling and transport

Age at blood sampling



< 48 h | > 48 h | > 72 h | 4-7 days | cord

Interval sampling- analysis



1-2 d 3-5 d > 5 d unknown

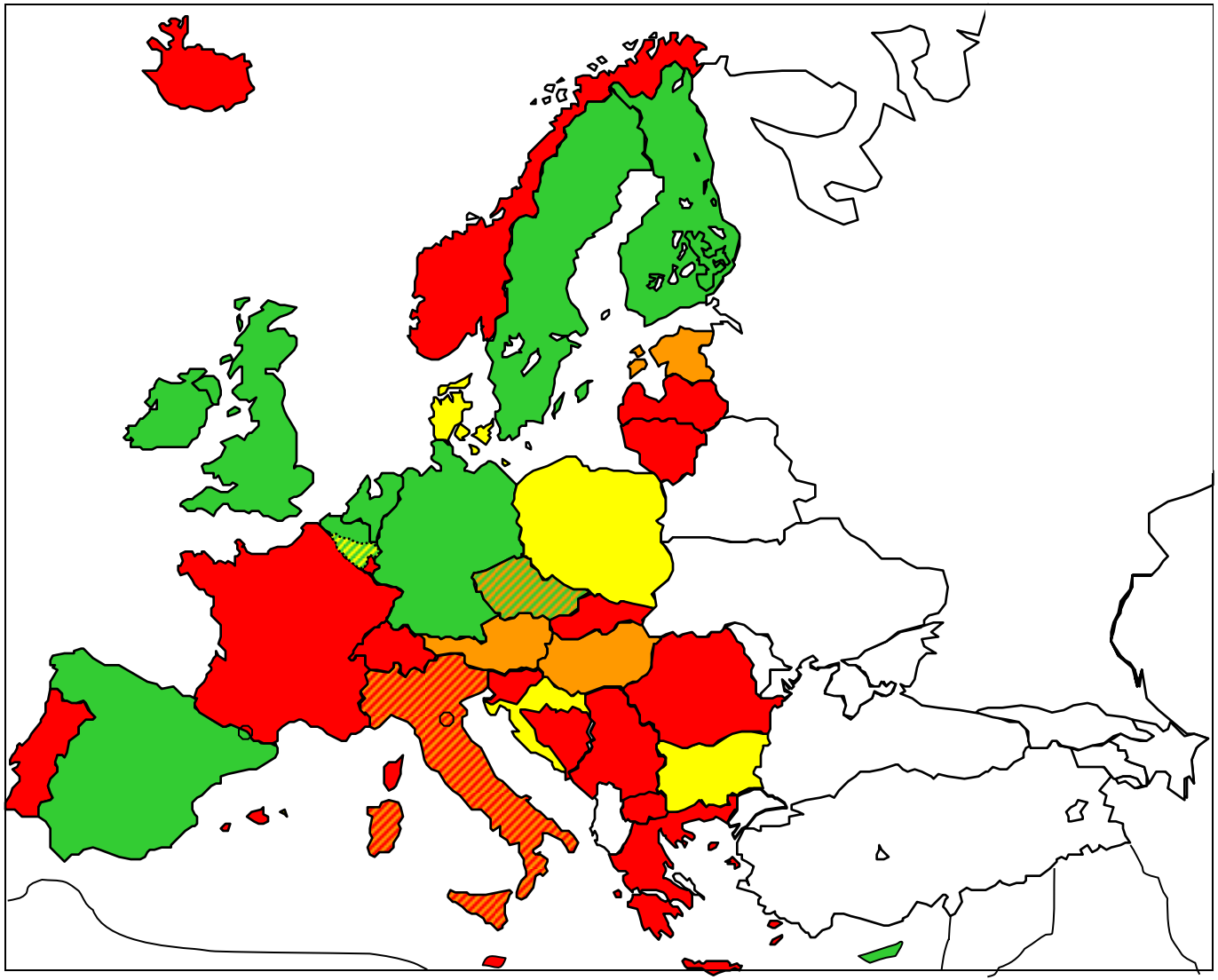
Expert Opinion Document - Recommendations

BLOOD SAMPLING

- Sampling between 48 and 72 h post partum
- Coverage aimed at 100%
- Families moving across borders should be monitored to prevent “losing” them

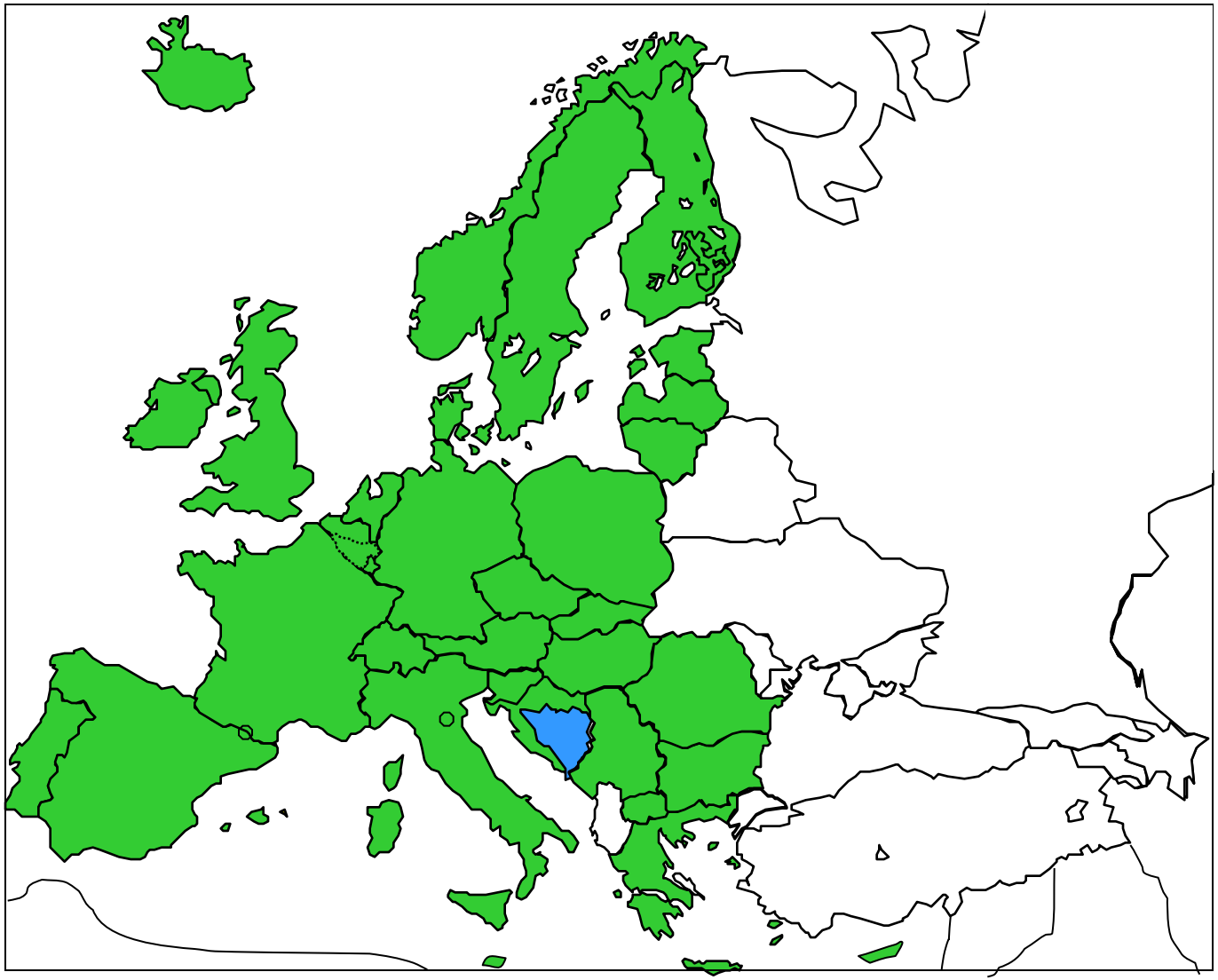
Part 4 Laboratory procedures, quality etc.

Accreditation / Certification



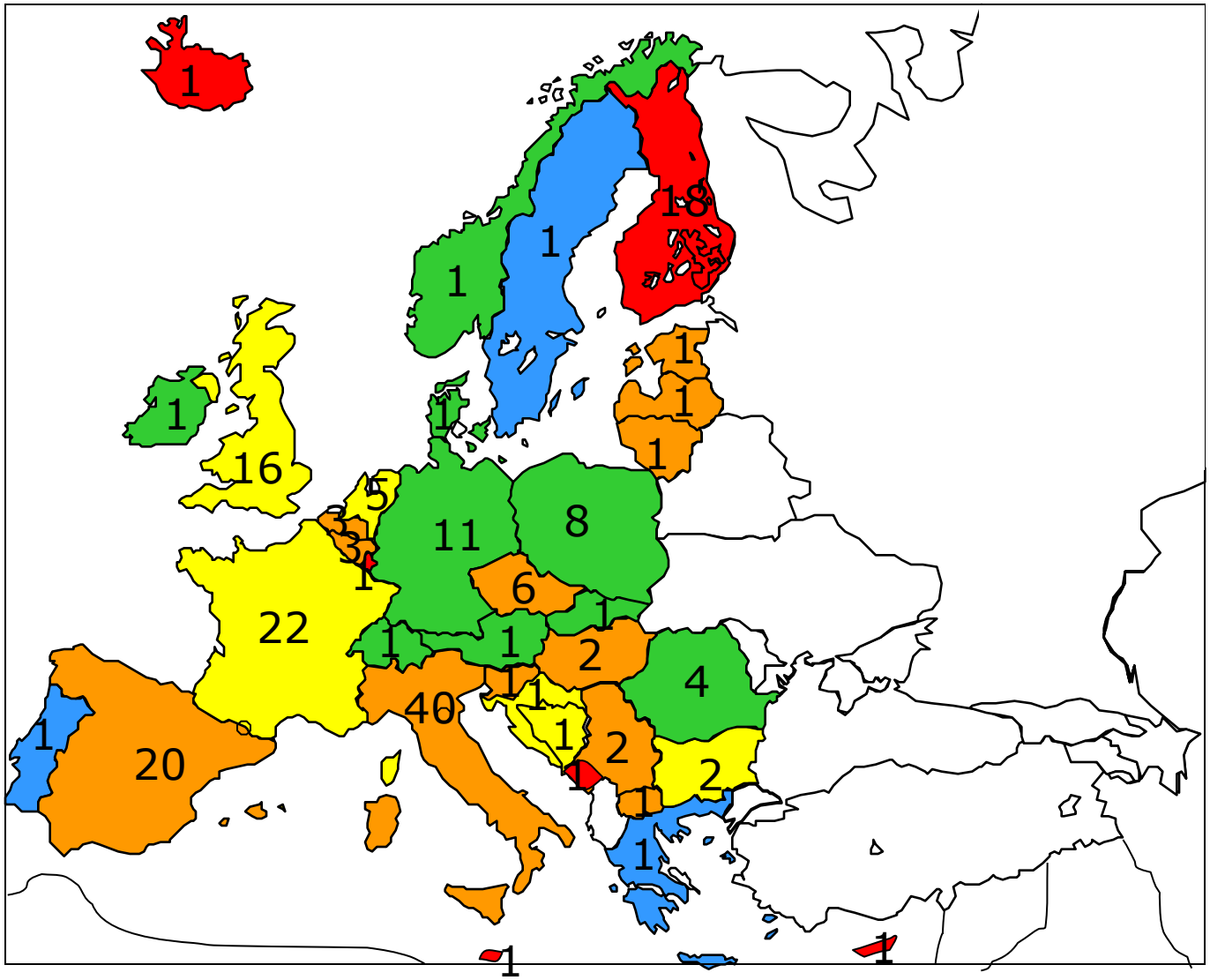
ISO15189 | ISO 9000 | Other | No | Unknown

EQAS



yes no unknown

Average number of specimens per lab



< 10000 | < 30000 | < 50000 | < 100000 | > 100000

Expert Opinion Document - Recommendations

LABORATORY PRACTICES

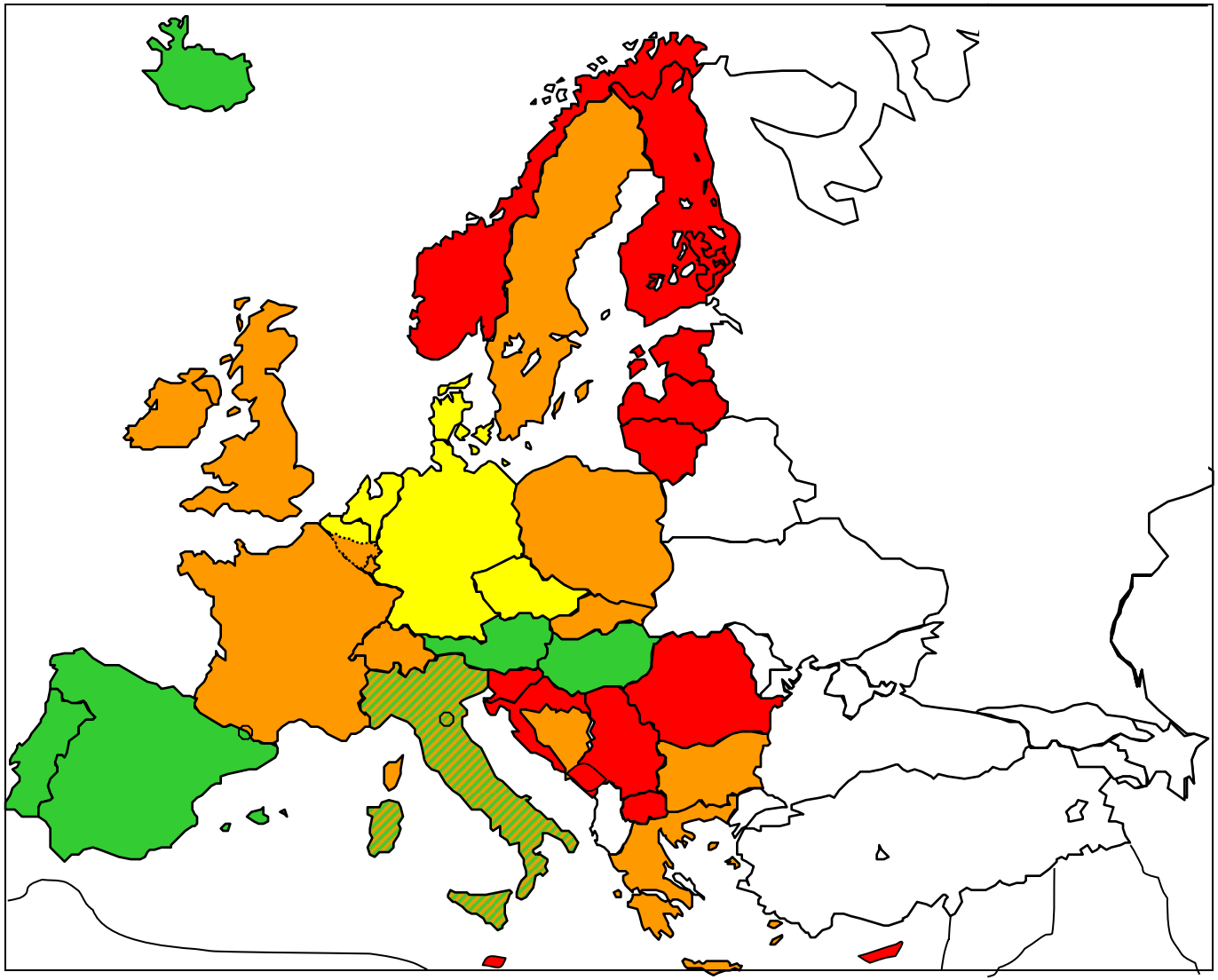
- Target values and benchmarks concerning quality and efficacy to be shared
- Protocols to be defined, published and reviewed regularly
- Laboratories should be accredited/certified and should participate in EQA systems
- Within jurisdiction the number of laboratories should be limited
- Laboratories should handle at least 30000-50000 samples per year

Part 5 Screening panels

Number of countries per condition

Cong. Hypothyroidism	All
Phenylketonuria	All except Finland, Malta
Cong. Adrenal Hyperpl.	15
Cystic Fibrosis	10
Biotinidase Deficiency	10
Galactosaemia	10
MCADD	13
Amino Acidemias	6 (many), 6 (some)
Fatty Acid Oxidation Def.	8 (many), 3 (some)
Organic Acidurias	8 (many), 3 (some)
Sickle Cell Disease	5
Gluc.6-Phosph.Deh.Def	2

Number of conditions per country



1-2 3-10 11-20 >20

Number of conditions per country

- 1-2: 13 countries
- 3-10: 12 countries
- 11-20: 5 countries
- >20: 6 countries

- Note: not always agreement what to call a condition

- Note: more is not always better

Expert Opinion Document - Recommendations

CONDITIONS

- Need for clear and published definitions of conditions
- Interest of the infant has priority over the interest of the family
- Universal screening is preferred over targeted screening
- Screen-positive cases are entitled to treatment
- Methodology should avoid unintentional findings (e.g. carriers)

Expert Opinion Document - Recommendations

COUNTRIES WITH A LIMITED PANEL

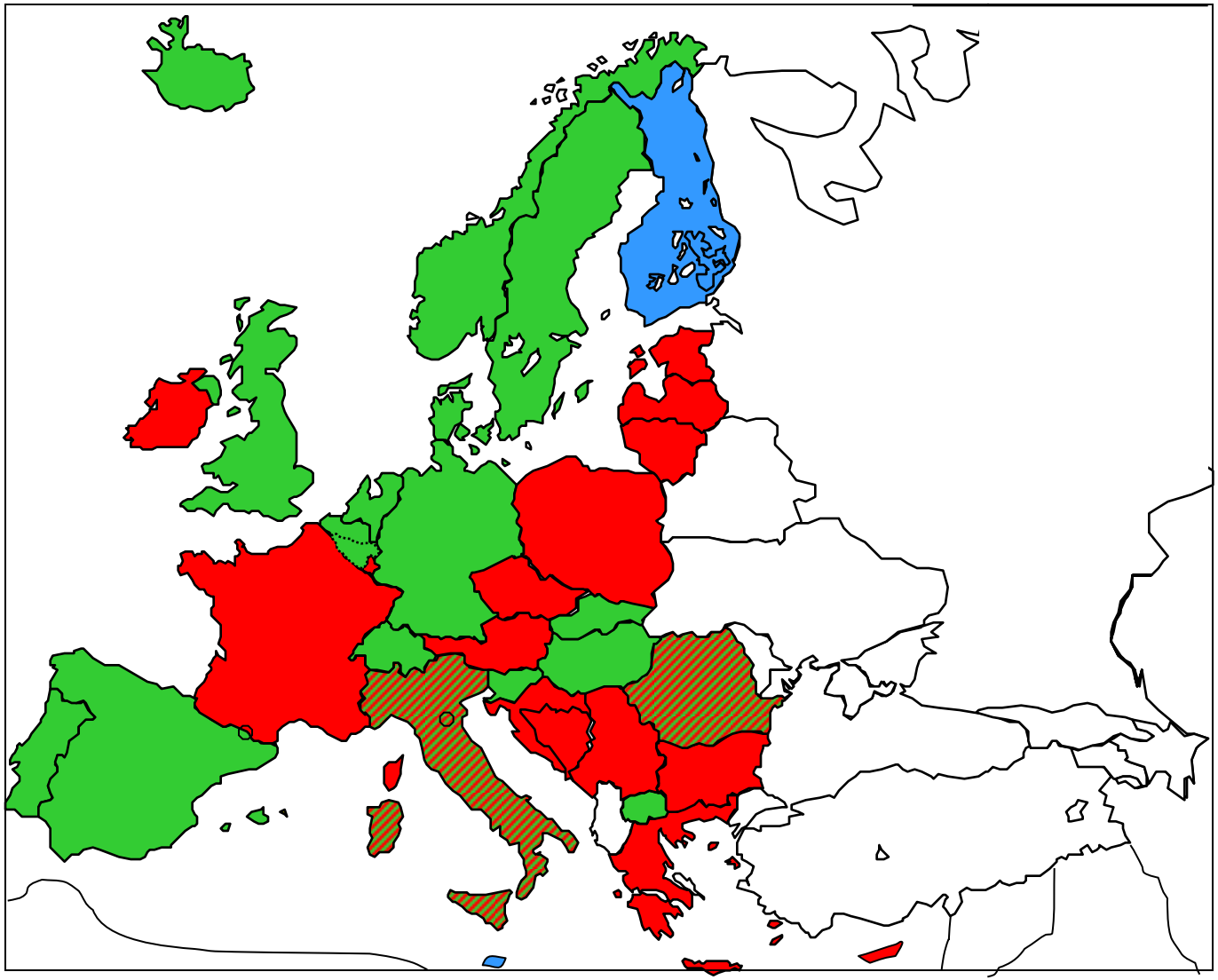
- Consider what evidence is already available in other countries

- Do not repeat what already has been done elsewhere, such as randomised control testing

- Expand the panel step by step

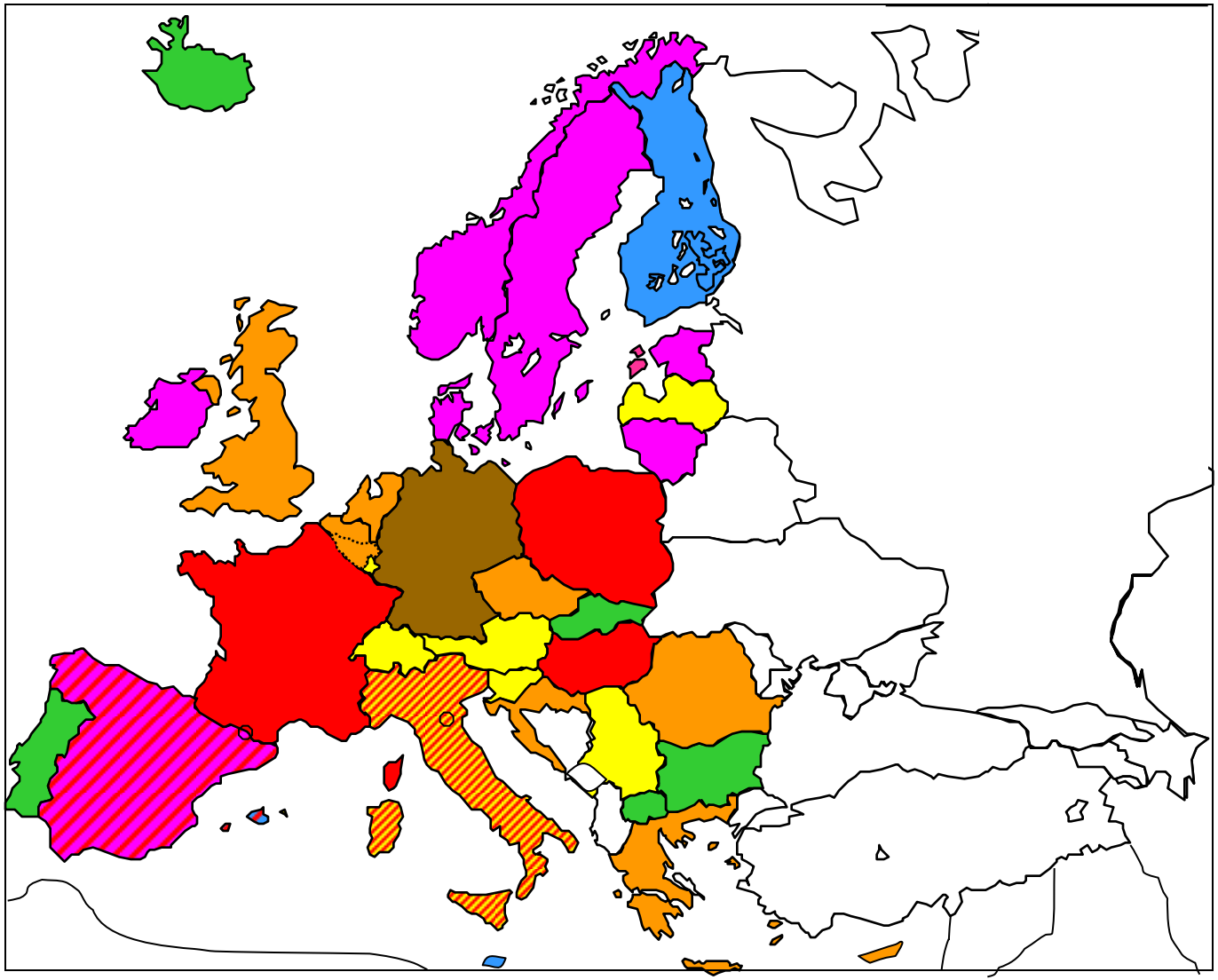
Part 6 Blood spot storage

Information on blood spot storage



yes no not applic.

Length of storage



not appl

< 1 y | 1 y | 2-5 y | 6-10 y | 11-20 y | > 20 y

Expert Opinion Document - Recommendations

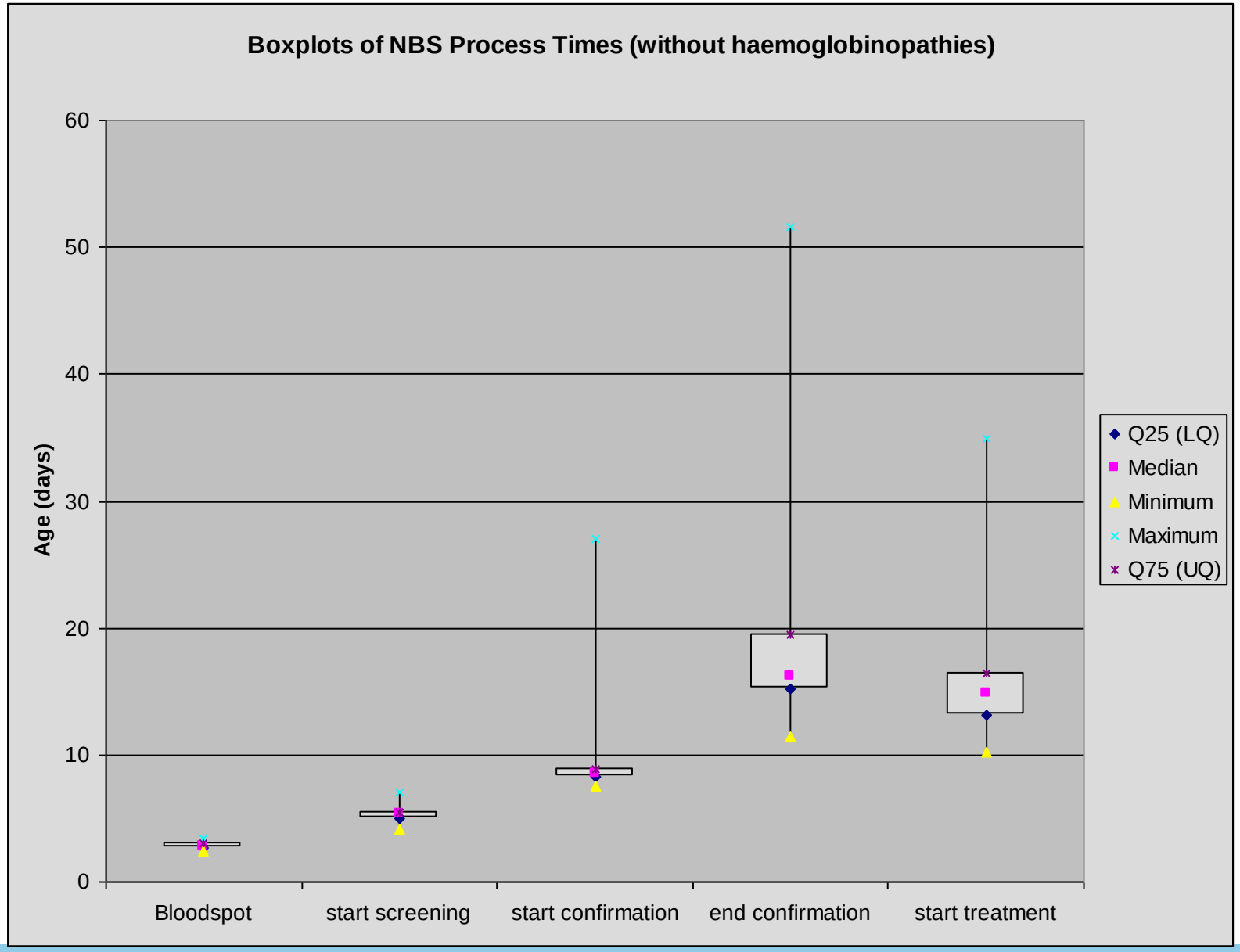
BLOOD SPOT STORAGE

- Storage for quality control for at least 5 years
- Protection of personal information and blood spots
- Use for research purposes subject to national regulations
- Development of European consensus regulations to be pursued

Part 7 Confirmatory Diagnostics

- Confirmatory diagnostics are (partly) outside the screening programme and the responsibility of the paediatricians
- Difficult to obtain consensus

Critical moments



Expert Opinion Document - Recommendations

POSITIVE RESULTS

- Communication to parents needs careful attention
- Every screen-positive result must be confirmed as soon as possible

- Unintended findings must be available to parents if relevant for the health of the child
- Specific decisions concerning information on carriership are needed in each country

Part 8 Programme evaluation

	Guideline & practice	No guideline & practice	Guideline & no practice	No guideline & no practice
Feedback final diagnoses to screening labs/registry	94%	6%	0%	0%
Monitoring long-term outcome	22%	60%	0%	18%
Feedback long term outcome to diagnostic unit	27%	16%	4%	53%
Epidemiological evaluation of screening programs	25%	60%	1%	14%

Expert Opinion Document - Recommendations

PROGRAM EVALUATION

- Process evaluation should be done annually and the results made public
- Databases are needed to monitor and evaluate, and must be shared across borders
- Results of confirmatory diagnostics and long-term outcomes must be made available

Documents available

- On the ISNS website:

www.isns-neoscreening.org News section

There still is a long way to go!

Thanks !!!