



HEPATITIS B AND HEPATITIS C VIRUS AMONG BLOOD DONORS

VIRAL HEPATITIS PREVENTION BOARD MEETING

LISBON, PORTUGAL, 18 – 19 November 2010

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Presidente do Conselho Directivo do Instituto Português do Sangue, I.P.



SUMMARY

I. THE PORTUGUESE BLOOD SUPPLY SYSTEM

II. DONORS ELEGIBILITY CRITERIA

III. HEPATITIS B VIRUS

IV. HEPATITIS C VIRUS

V. CONCLUSION



SUMMARY

I. THE PORTUGUESE BLOOD SUPPLY SYSTEM

II. DONORS SELECTION CRITERIA

III. HEPATITIS B VIRUS

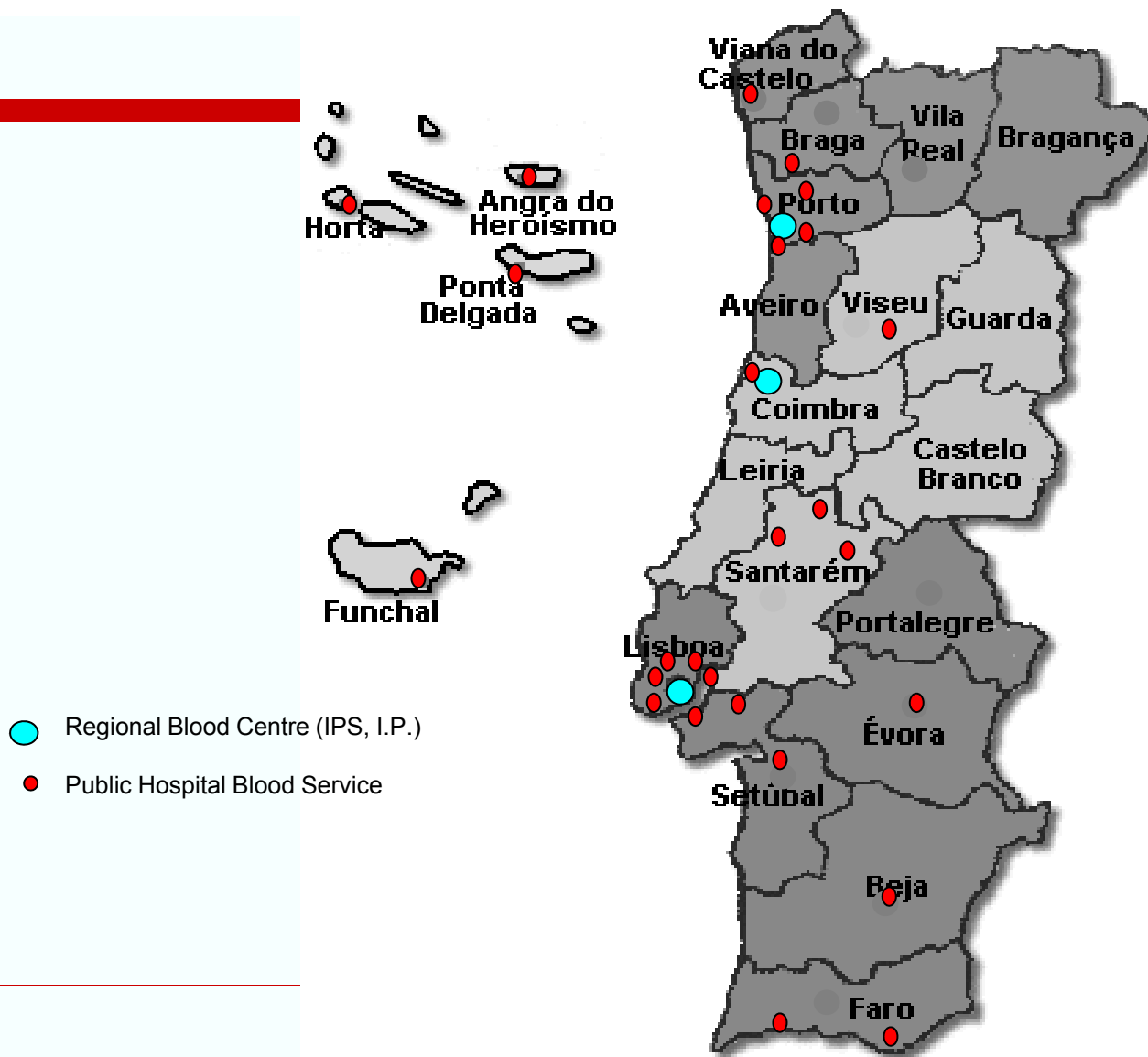
IV. HEPATITIS C VIRUS

V. CONCLUSIONS



BLOOD SERVICES IN PORTUGAL

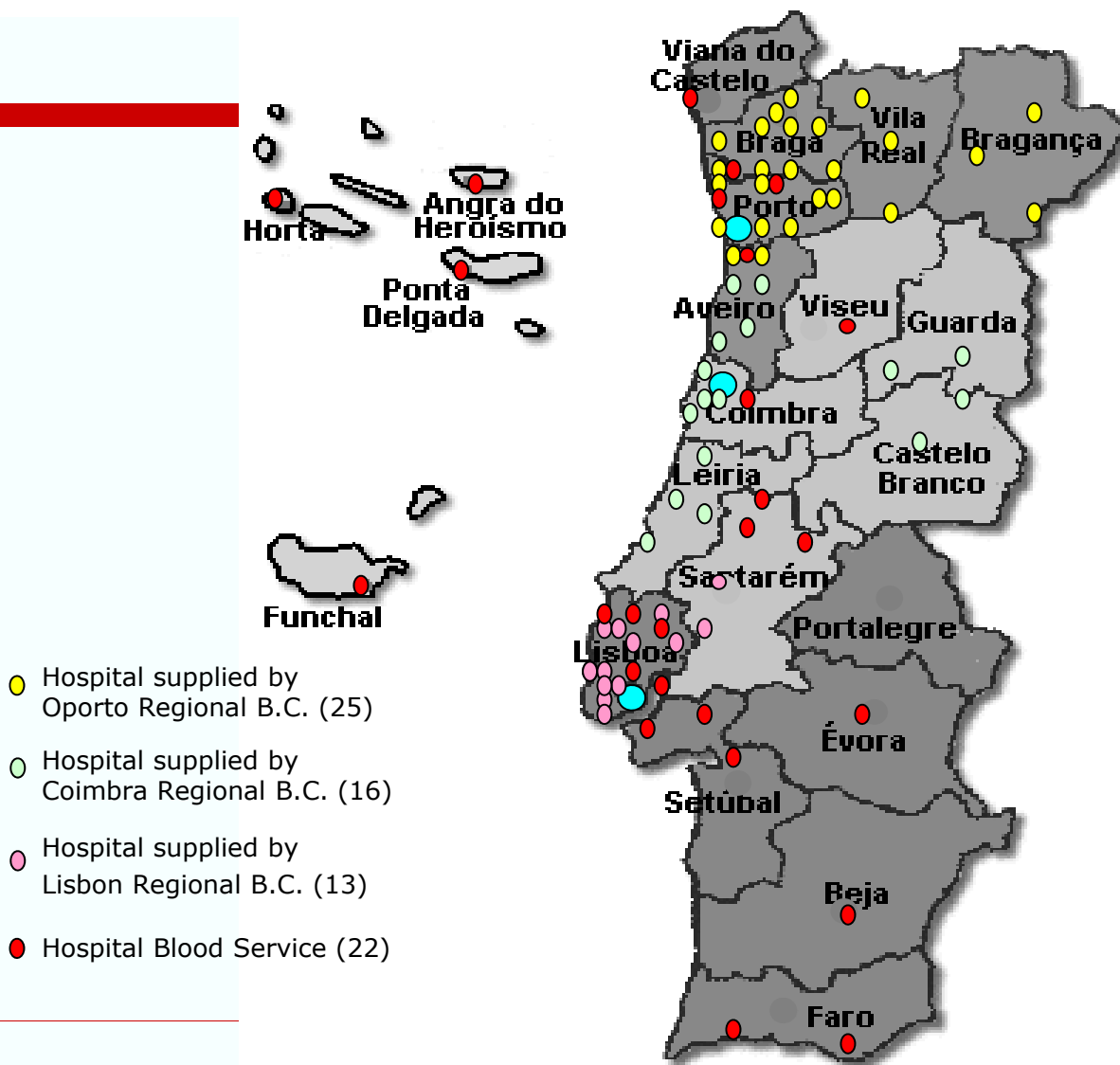
Year 2009





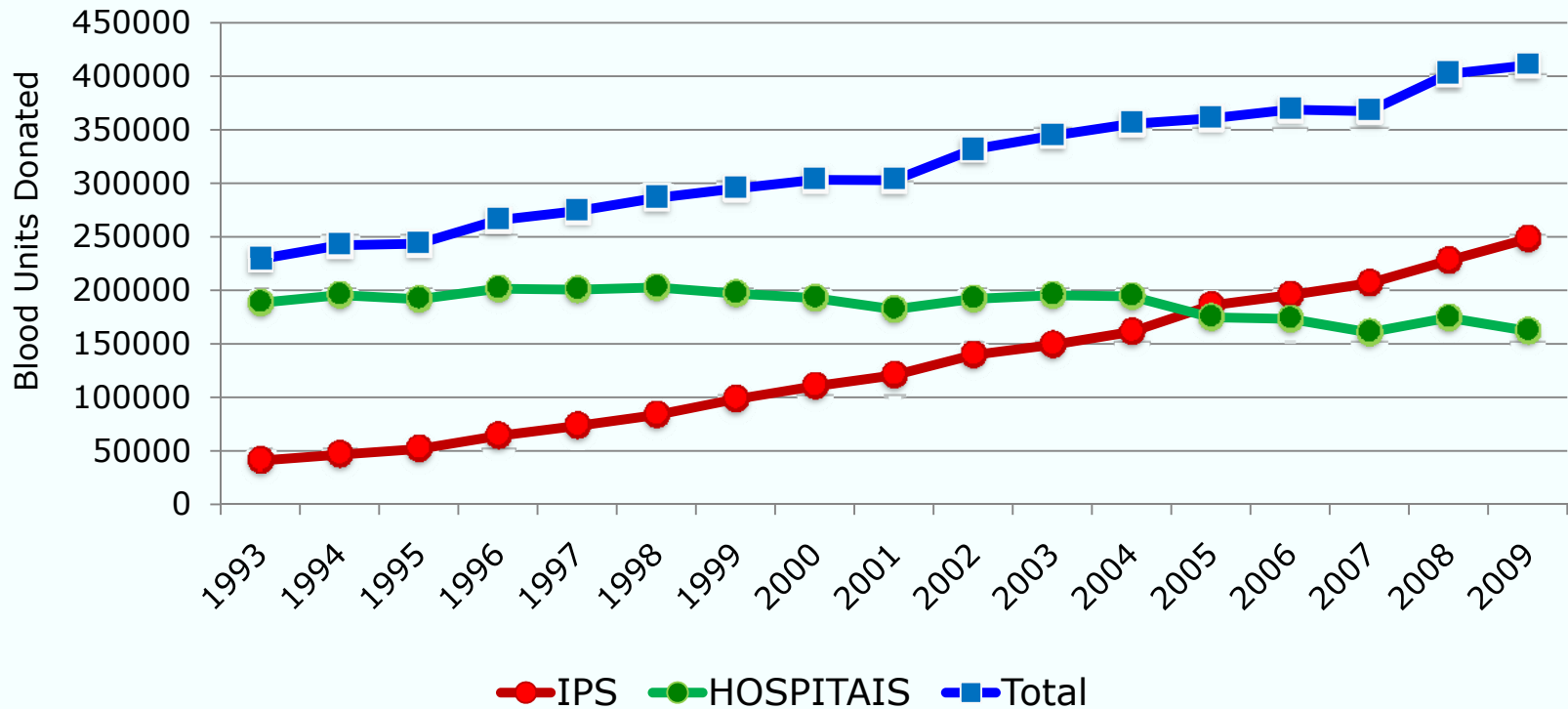
PUBLIC HOSPITALS AND BLOOD SUPPLY

Year 2009





BLOOD DONATIONS IN PORTUGAL (TREND)





BLOOD DONATIONS IN PORTUGAL

| Year | Blood donations | Portuguese Blood Institute | Hospitals |
|------|-----------------|----------------------------|----------------|
| 2008 | 390,964 | 227,691 | 163,273 |
| 2009 | 400,278 | 248,111 | 152,167 |



FIRST-TIME BLOOD DONORS (National Data)

| Year | First-time donors | Portuguese Blood Institute | Hospitals |
|------|-------------------|----------------------------|-----------|
| 2009 | 44,052 | 31,776 | 12,276 |



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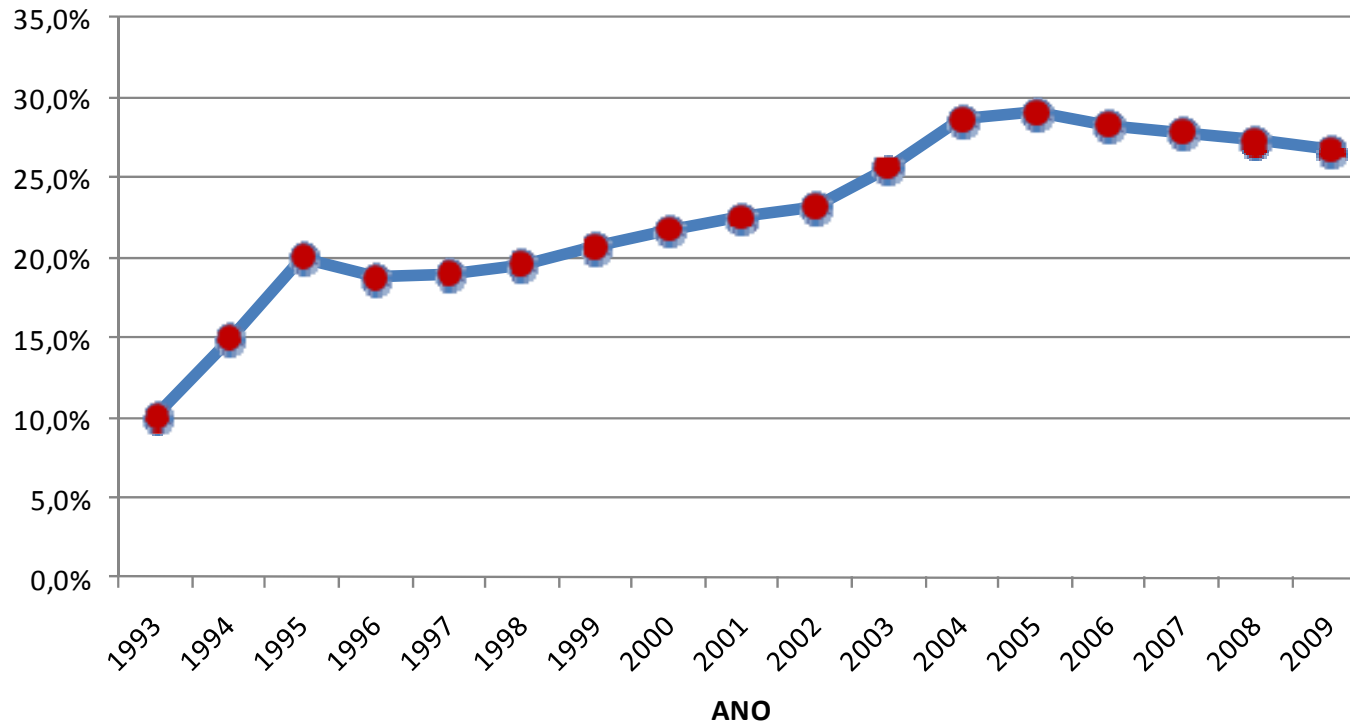


BLOOD DONORS ELEGIBILITY CRITERIA

- **Age** - $\geq 18; \leq 65$
 - **Weight** - ≥ 50 Kg
 - **Eligibility screening questionnaire** - filled in privacy.
 - **Medical examination** - clinically and mentally fitted.
-



DEFERRALS (Portuguese Blood Institute)





TEMPORARY DEFERRALS (Portuguese Blood Institute)

| | |
|--|-----------------------|
| Recent history of infectious or parasitic disease | 4,856 (6.0%) |
| Recent history of flu | 4,567 (5.7%) |
| New sexual partner | 4,424 (5.5%) |
| Major surgery in the last 6 months | 3,386 (4.2%) |
| GI endoscopy in the last 4 months | 2,173 (2.7%) |
| Dentistry in the last 7 days | 1,476 (1.8%) |
| Medical decision | 14,198 (17.6%) |



SCREENING LABORATORY TESTS

- **HBsAg**
 - **HBc antibody**
 - **HCV antibody**
 - **HIV 1/2 antibody**
 - **HTLV I/II antibody**
 - ***Treponema pallidum* antibody**
 - **HBV / HCV / HIV - NAT**
 - **ALT**
-



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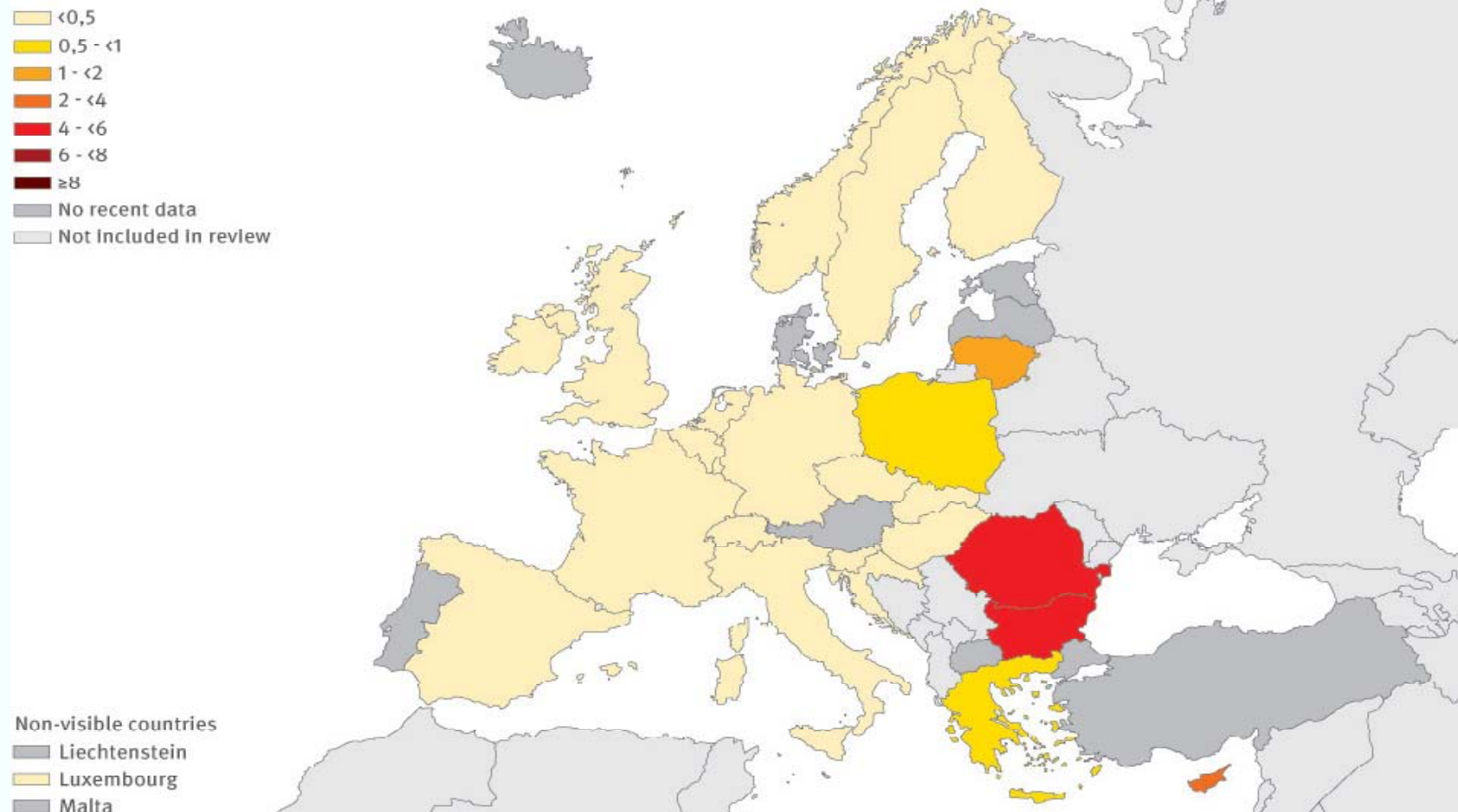
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HEPATITIS B VIRUS



Hepatitis B prevalence in first-time blood donors: HBsAg



Source: - ECDC Technical Report . Hepatitis B and C in the EU neighbourhood: prevalence, burden of disease and screening policies



SCREENING AND CONTROL TESTS

HBsAg - ABBOT; BIORAD
Prisma HbsAg, Architect HBSAg, Monolis HBsAg Ultra

NAT - ROCHE; CHIRON
Cobas Taqscreen MPX test, Proclix Utrio Assay

CONTROL - Acrometrix, Pelispy Pro HBV Positive EQC



YEAR 2009

| HBV Among 44,052 First-time Blood Donors National Data | | | |
|---|------------------|---|--------------|
| | HOSPITALS | PORTUGUESE BLOOD INSTITUTE | Total |
| ELISA (+)/NAT (-) | 7 | 4 | 11 |
| ELISA (+)/NAT (+) | 21 | 67 | 88 |
| ELISA (-)/NAT (+) | 2 | 3 | 5 |
| Prevalence (%) | 0.24 | 0.23 | 0.236 |



Hepatitis B Virus : HBsAg (+) or NAT (+)

| PREVALENCE RATES (%) Portuguese Blood Institute | | | |
|---|-------------------|-------------------|----------------------|
| Year | All donors | First-time donors | Repeat donors |
| 2008 | (0.03) 1:3,206 | (0.18) 1:542 | (0.0015) 1:36,209 |
| 2009 | (0.03) 1:3,222 | (0.23) 1:412 | (0.0013) 1:72,111 |
| 2010 (9 months) | (0.02) 1:4,300 | (0.14) 1:701 | (0.0019) 1:52,289 |



YEAR 2010: January- September

| HBV Among First-time Blood Donors Portuguese Blood Institute | | | |
|---|------------------------|-----------------------|-----------------------|
| | COIMBRA RBC | LISBON RBC | OPORTO RBC |
| ELISA (+)/NAT (-) | 0 | 0 | 0 |
| ELISA (+)/NAT (+) | 11 | 16 | 12 |
| ELISA (-)/NAT (+) | 1 | 0 | 0 |



YEAR 2010: January-September
Lisbon Regional Blood Centre

HBV Among First-time Blood Donors
BY AGE GROUP

| Age | ≤20 | 21-30 | 31-40 | 41-50 | 51-60 | ≥61 | Total |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Male | 1065 | 2444 | 1995 | 1175 | 584 | 94 | 7257 |
| Female | 1394 | 2576 | 1365 | 1365 | 578 | 38 | 8207 |
| Prev.(%) male | 0.09 | 0.24 | 0.05 | 0.17 | 0.08 | 0.00 | 0.15 |
| Prev.(%) female | 0.07 | 0.07 | 0.07 | 0.07 | 0.00 | 0.00 | 0.06 |



YEAR 2010: January-September
Lisbon Regional Blood Centre

HBV Among First-time Blood Donors
BY COUNTRY

| Age | ≤20 | 21-30 | 31-40 | 41-50 | 51-60 | ≥61 | Total |
|-------------------|-----|-------|-------|-------|-------|-----|-------|
| Gender | m/f | m/f | m/f | m/f | m/f | m/f | |
| Portugal | | 1*/ | | 1/1 | | | 2/1 |
| *Guinea-Bissau | 1/1 | 2/ | | | | | 3/1 |
| S.Tomé e Príncipe | | /1 | | | | | 0/1 |
| Angola | | 2/ | 1/ | | | | 3/0 |
| Cabo Verde | | 1/ | | | | | 1/0 |
| Mauritania | | | | | 1/ | | 1/0 |
| Ukraine | | /1 | | 1/ | | | 1/1 |
| Moldova | | | /1 | | | | 0/1 |



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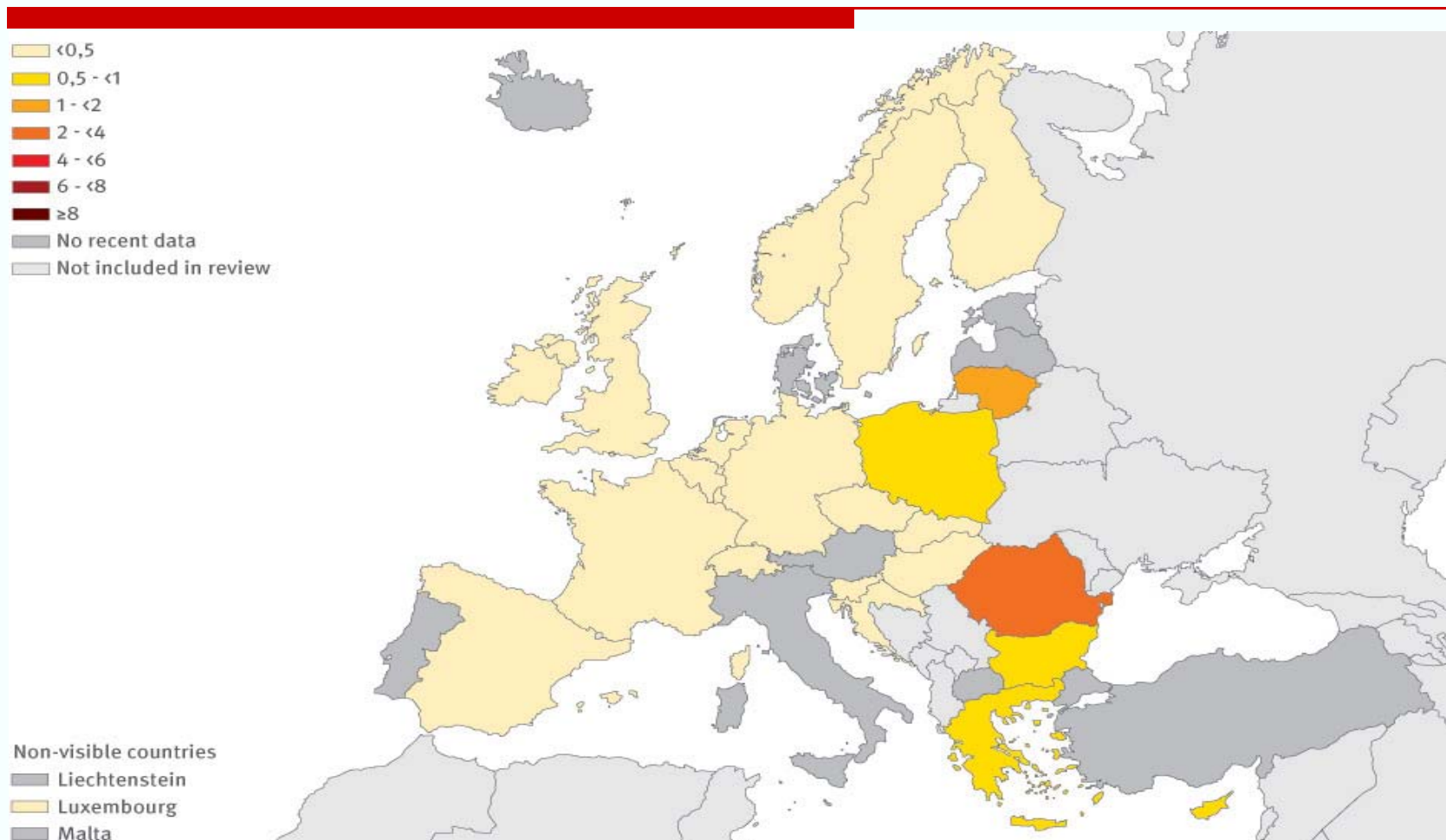
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HEPATITIS C VIRUS



Hepatitis C prevalence in first-time blood donors: anti-HCV



Source: - ECDC Technical Report . Hepatitis B and C in the EU neighbourhood: prevalence, burden of disease and screening policies



SCREENING AND CONTROL TESTS

Anti-HCV - ABBOT; ORTHO

Prisma HCV, Architect Anti-HCV, Ortho HCV 3.0 ELISA

NAT - ROCHE; CHIRON

Cobas Taqscreen MPX test, Proclix Utrio Assay

CONTROL - Acrometrix, Pelispy Pro HCV Positive EQC



YEAR 2009

| HCV Among 44,052 First-time Blood Donors National Data | | | |
|---|------------------|---|--------------|
| | HOSPITALS | PORTUGUESE BLOOD INSTITUTE | Total |
| ELISA (+)/NAT (-) | 60 | 12 | 72 |
| ELISA (+)/NAT (+) | 20 | 34 | 54 |
| ELISA (-)/NAT (+) | 0 | 0 | 0 |
| Prevalence (%) | 0.49 | 0.14 | 0.28 |



Hepatitis C Virus : Serology or NAT (+)

| PREVALENCE RATES (%) Portuguese Blood Institute | | | |
|---|-------------------|-------------------|----------------------|
| Year | All donors | First-time donors | Repeat donors |
| 2008 | (0.02) 1:4,949 | (0.11) 1:857 | (0.0015) 1:63,609 |
| 2009 | (0.02) 1:4,962 | (0.14) 1:690 | (0.0018) 1:54,084 |
| 2010 (9 months) | (0.02) 1:5,136 | (0.12) 1:849 | (0.0019) 1:52,289 |



YEAR 2010: January-September

| HCV Among First-time Blood Donors Portuguese Blood Institute | | | |
|---|------------------------|-----------------------|-----------------------|
| | COIMBRA RBC | LISBON RBC | OPORTO RBC |
| ELISA (+)/NAT (-) | 6 | 4 | 2 |
| ELISA (+)/NAT (+) | 6 | 15 | 0 |
| ELISA (-)/NAT (+) | 0 | 0 | 0 |



YEAR 2010 : January-September
Lisbon Regional Blood Centre

PREVALENCES OF HCV AMONG FIRST-TIME BLOOD DONORS
BY AGE GROUP

| Age | ≤20 | 21-30 | 31-40 | 41-50 | 51-60 | ≥61 | Total |
|--------------------|------------|-------------|-------------|-------------|-------------|------------|-------------|
| Male | 1065 | 2444 | 1995 | 1175 | 584 | 94 | 7257 |
| Female | 1394 | 2576 | 1365 | 1365 | 578 | 38 | 8207 |
| Prev.(%) male | 0.0 | 0.08 | 0.25 | 0.42 | 0.34 | 0.0 | 0.19 |
| Prev.(%) female | 0.0 | 0.04 | 0.14 | 0.07 | 0.17 | 0.0 | 0.06 |



YEAR 2010 : January-September
Lisbon Regional Blood Centre

HCV AMONG 1st TIME BLOOD DONORS
BY COUNTRY OF ORIGIN

| Age | ≤20 | 21-30 | 31-40 | 41-50 | 51-60 | ≥61 | Total |
|------------|-----|-------|-------|-------|-------|-----|-------|
| Gender | m/f | m/f | m/f | m/f | m/f | m/f | |
| Portugal | | /1 | 3/1 | 4/1 | 2/ | | 9/3 |
| Brazil | | 1/ | | | | | 1/0 |
| East Timor | | | 1/ | | | | 1/0 |
| Angola | | 1/ | | | | | 1/0 |
| Mozambique | | | | 1/ | /1 | | 1/1 |
| Ukraine | | | 1/1 | | | | 1/1 |



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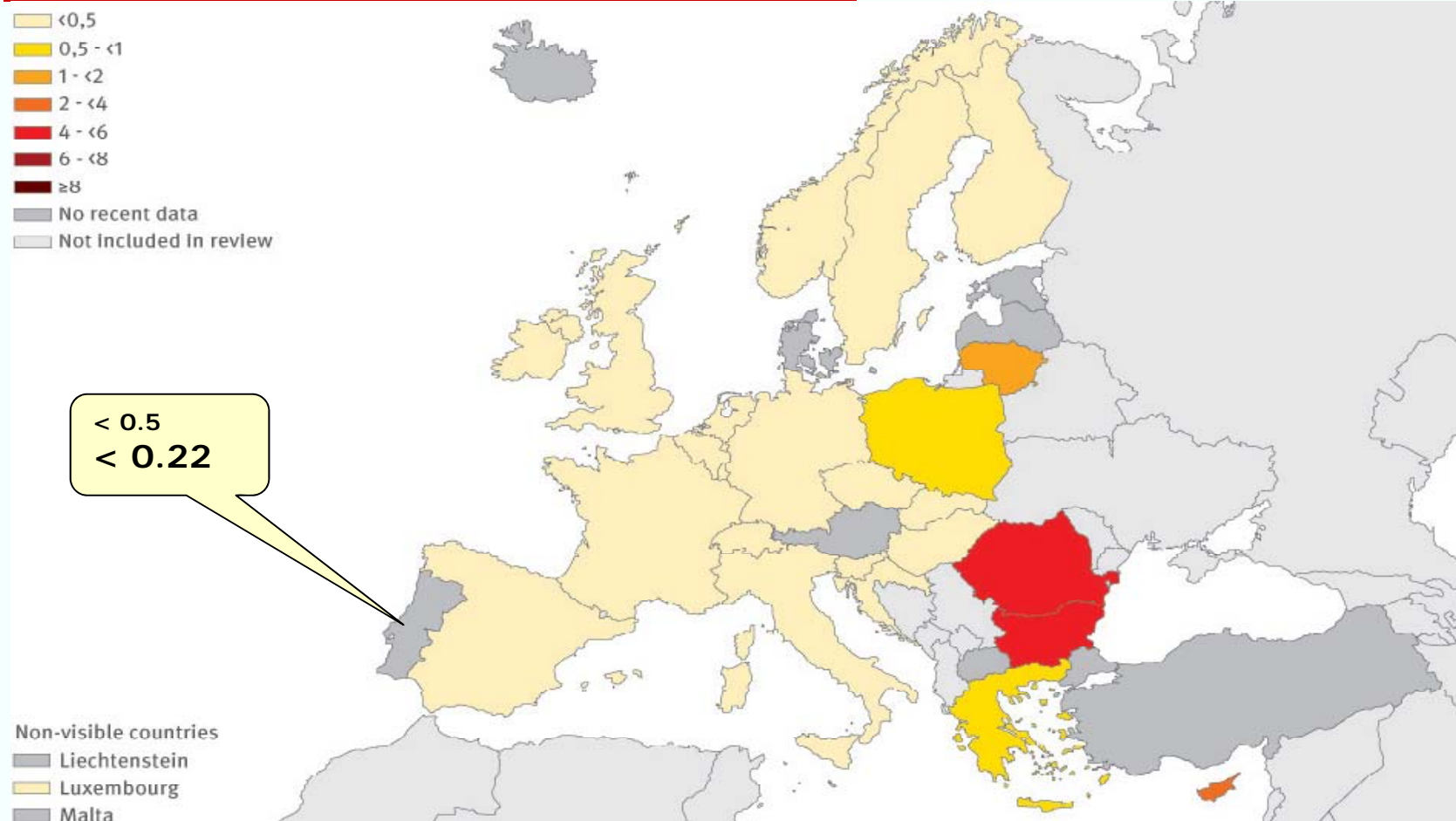


CONCLUSION

| HBV and HCV Prevalence Rates (%) Portuguese Blood Institute | | | | | |
|---|----------------------------|-----|-----|-----------------|------|
| Year | First-time blood donations | HBV | HCV | Prevalences (%) | |
| | | | | HBV | HCV |
| 2008 | 36,862 | 68 | 42 | 0.18 | 0.11 |
| 2009 | 31,776 | 74 | 46 | 0.23 | 0.14 |
| 2010 (9 months) | 28,041 | 40 | 33 | 0.14 | 0.12 |



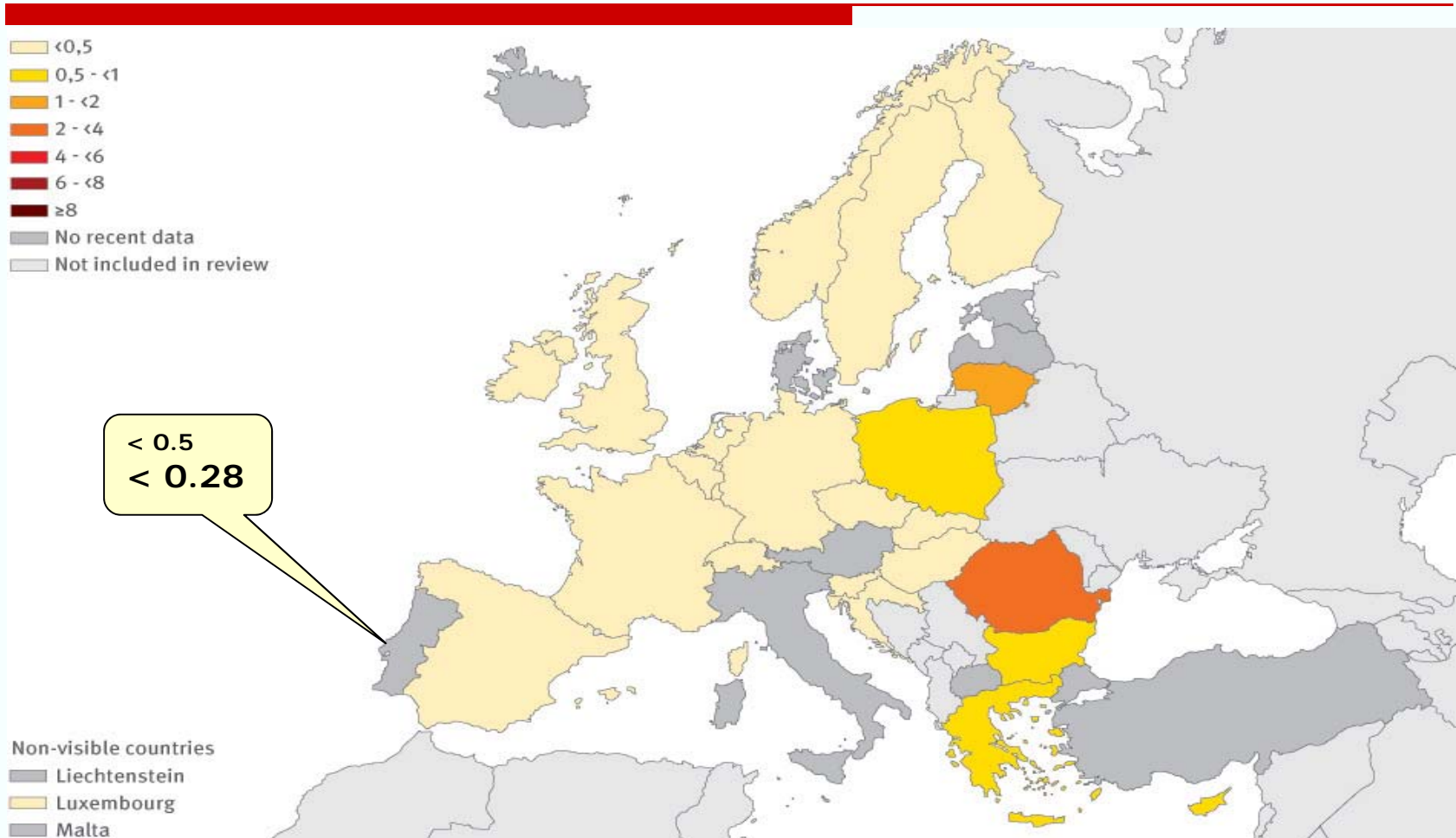
Hepatitis B prevalence in first-time blood donors: HBsAg



Source: - ECDC Technical Report . Hepatitis B and C in the EU neighbourhood: prevalence, burden of disease and screening policies



Hepatitis C prevalence in first-time blood donors: anti-HCV



Source: - ECDC Technical Report . Hepatitis B and C in the EU neighbourhood: prevalence, burden of disease and screening policies



THANK YOU !

OBRIGADO !
