Programme STI, HIV/AIDS and viral hepatitis

Screening programmes for Hepatitis B/C in Europe

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Why might screening be needed for hepatitis B and C in Europe?

Criteria by Wilson and Jungner 1968:

**Condition:** The condition sought should be an important health problem whose natural history, including development from latent to declared disease, is adequately understood. The condition should have a recognizable latent or early symptomatic stage.

**Diagnosis:** There should be a suitable, acceptable and safe diagnostic test. There should be an agreed policy, based on respectable test findings and national standards, as to whom to regard as patients, and the whole process should be a continuing one.

**Treatment:** There should be an accepted and established treatment or intervention for individuals identified as having the disease or pre-disease condition and facilities for treatment should be available.

**Cost:** The cost of case-finding (including diagnosis and treatment) should be economically balanced in relation to possible expenditure on medical care as a whole.
## General population: prevalence profiles

<table>
<thead>
<tr>
<th>HBsAg</th>
<th>Low (≤1%)</th>
<th>Intermediate (&gt;1% and ≤2%)</th>
<th>High (&gt;2%)</th>
<th>Insufficient data</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCV Ab</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (≤1%)</td>
<td>BE, DE, NL, SK, SE, SW, UK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate (&gt;1% and ≤2%)</td>
<td>FR, ES</td>
<td>GR, Turkey</td>
<td>BG, PL</td>
<td></td>
</tr>
<tr>
<td>High (&gt;2%)</td>
<td></td>
<td>Italy</td>
<td>Romania</td>
<td></td>
</tr>
<tr>
<td>Insufficient data</td>
<td>CY, CZ, DK, FI, IE</td>
<td></td>
<td></td>
<td>AT, Croatia, EE, FYROM, HU, IS, LV, LI, LT, LU, MT, NO, PT, SL</td>
</tr>
</tbody>
</table>
Aim of the ECDC literature review

For the EU/EEA obtain insight into

- **National screening policies and their effectiveness**
- The HBV and HCV prevalence
- Burden of disease

by reviewing the published literature
Review Questions

1. National practices regarding screening for chronic HBV and HCV infections in (sub)populations

2. Effectiveness of these programmes in terms of process, outcome, prevention of secondary cases, cost-effectiveness

Limitations:

- Limited to studies published post 2000
- Limited to scientific literature (with some exceptions)
- Limited to literature in English
- Time of data collection variable
- Limited to EU/EEA area
Addressing the effectiveness of screening

• Pregnant Women – Intervention available for hepatitis B
• Groups at increased risk:  
  – Injecting drug users
  – Men who have sex with men
  – Sex workers
  – Migrants from high prevalence areas
• General population
Screening programme for blood donors, Europe

The prevalence of HBsAg among first time blood donors

[Map showing prevalence of HBsAg across Europe]

- <0.5
- 0.5 - <1
- 1 - <2
- 2 - <4
- 4 - <6
- 6 - <8
- ≥8
- No recent data
- Not included in review

Non-visible countries:
- Liechtenstein
- Luxembourg
- Malta
The prevalence of anti-HCV among first time blood donors
Screening program for pregnant women

- **HBV**
- **HBV and HCV**
- **HBV (not at the national level)**
- **No screening for HBV or HCV**
- **N/A**

Czech Republic: no information on HBV, no HCV screening

Liechtenstein: HBV screening, no information on HCV

Source: ECDC Surveillance and prevention of hepatitis B and C in Europe
The prevalence of HBsAg among pregnant women
The prevalence of anti-HCV among pregnant women
Findings

• Prevalence in **first time blood donors** has generally been regarded as the lower limit of the prevalence in the general population
  ➔ HBV/HCV prevalence estimates in first time blood donors were lower than those for the general population

• Prevalence in **pregnant women** in nearly all countries - with available data – is higher as compared with population
  ➔ may reflect higher proportion of migrant women compared to general population studies
Findings cont.

Migrants: HBV and HCV prevalence studies are limited
- In nearly all countries the estimated prevalence of HBV and HCV is higher among migrants compared to the general population
- Large estimated numbers of chronically HBV and HCV infected migrants in Western European countries (Germany, Spain, France, Italy, UK)

IDU: large number of prevalence studies of HCV
- Representativeness of studied populations is variable
- HCV is highly prevalent among IDUs in Europe
- HBV prevalence among IDUs is much lower than that of HCV
National practices on screening

- **Blood donors**: screening policy in place in all EU/EEA Member States
- **Pregnant women**: studies from minority of countries: HBsAg screening widespread, HCV-Ab only in a few
- **Migrants**: no published studies on screening policies
- **IDU**: screening for HCV supported by professional consensus statements, published policies on HCV (UK) and HBV (NL)
- **MSM**: screening programme HBV in the Netherlands
- **General population**: no comprehensive programmes but France and Italy have recommendations for HCV screening for multiple additional population groups
### Effectiveness of the screening programmes

**Antenatal screening for HBsAg**

<table>
<thead>
<tr>
<th>Country</th>
<th>Year of publication</th>
<th>Proportion screened (%)</th>
<th>Proportion of infants completely vaccinated (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>2006</td>
<td>97%</td>
<td>Not reported</td>
</tr>
<tr>
<td>Greece</td>
<td>2006</td>
<td>91.3%</td>
<td>Not reported</td>
</tr>
<tr>
<td>Italy</td>
<td>1990</td>
<td>71%</td>
<td>85%</td>
</tr>
<tr>
<td>Italy</td>
<td>1998</td>
<td>91.6%</td>
<td>100%</td>
</tr>
<tr>
<td>Italy</td>
<td>2003</td>
<td>91.8%</td>
<td>95%</td>
</tr>
<tr>
<td>Italy</td>
<td>2005</td>
<td>100%</td>
<td>Not reported</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2004</td>
<td>99.3%</td>
<td>95%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2001</td>
<td>97%</td>
<td>99.7%</td>
</tr>
<tr>
<td>UK</td>
<td>2002</td>
<td>93%</td>
<td>Not reported</td>
</tr>
<tr>
<td>UK</td>
<td>2004</td>
<td>99.9%</td>
<td>93%</td>
</tr>
</tbody>
</table>
## Effectiveness of the screening programmes

**IDU screening for HBV/HCV**

<table>
<thead>
<tr>
<th>Country</th>
<th>Year of publication</th>
<th>Condition</th>
<th>Indicator</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hungary</td>
<td>2004</td>
<td>HBV and HCV</td>
<td>% drug treatment centres offering screening</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>2005</td>
<td>HCV</td>
<td>% screened</td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HBV</td>
<td>% screened</td>
<td>68%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HBV % susceptibles vaccinated</td>
<td>56%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2002</td>
<td>HBV</td>
<td>% screened</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% susceptibles vaccinated</td>
<td>58%</td>
</tr>
<tr>
<td>UK</td>
<td>2000</td>
<td>HBV</td>
<td>% drug agencies offering testing</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HCV</td>
<td>% drug agencies offering testing</td>
<td>24%</td>
</tr>
<tr>
<td>UK</td>
<td>2008</td>
<td>HCV</td>
<td>% screened</td>
<td>5%</td>
</tr>
<tr>
<td>Country</td>
<td>CER (year)</td>
<td>Conclusion</td>
<td>Comment</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>------------</td>
<td>------------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>£28,120 / QALY (2001)</td>
<td>Cost-effective</td>
<td>Uncertainties regarding for example the uptake of screening remain.</td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>£ 20,084 / LY (2004)</td>
<td>Cost-effective</td>
<td>Case finding is most cost-effective in people with longstanding infection</td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>£ 10,177 / QALY (1997)</td>
<td>Cost-effective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>Not reported</td>
<td>Screening IDUs and transfusion recipients was the most cost-effective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>ICER compared to baseline is €3,825 (1998)</td>
<td>Cost-effective</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CER: Cost Effectiveness Ratio
Conclusions

- Wide variation in published screening policies across Europe

- Evidence of cost-effectiveness of screening for HCV of IDU, migrants in one country and for HBV among pregnant women

- Evidence-base for population screening effectiveness is limited, but it is possible that considerable health gain could be achieved by secondary prevention of HBV and HCV

- Methodology on prevalence studies needs to be harmonized and EU-wide cost-effectiveness studies to be explored
Thank you!

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