Speeding Up Prevention & Control of Hepatitis B and C in the Eastern Mediterranean Region

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The growing threats of hepatitis B and C in the Eastern Mediterranean Region

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Outline

- Rationale behind presenting this paper to 56th Regional Committee (RC 56);

- Epidemiology of hepatitis B and C Viruses at the global level and in the Region;

- Current implementation of recommended prevention & control strategies in Member States & main challenges;

- RC 56 resolution.
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- RC 56 resolution.
Rationale

- High disease burden and growing threats;
- Efficient tools well known but implementation facing several challenges;
- Country request (Pakistan, Egypt, Tunisia, Morocco, etc);
- Recommendation of the Regional Advisory Group on Immunization (regional hepatitis B control goal)
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Hepatitis B disease burden

- **Globally**
  - 2 billion people with serological evidence of current or past infection
  - > 360 million have chronic hepatitis B virus (HBV) infection
  - Estimated 500 000–700 000 HBV-related deaths/year

- **Regionally**
  - Estimated 170 million people have serological evidence (markers) of infection
  - ~ 4.3 million new infections every year
  - ~ 100 000 persons from each birth cohort would die from HBV related liver diseases and hepatocellular carcinoma during their lifetime
The growing threats of Hepatitis B & C

HbS Ag Prevalence in EMR Countries

Palestine

Bahrain

Intermediate (2 to 8%)

High (> 8%)
Hepatitis C disease burden

- **Globally**
  - 170 million people have chronic hepatitis C virus (HCV) infection
  - 3–4 million newly infected every year
  - Untreated, 14%–45% of patients with HCV infection develop chronic liver disease and cirrhosis 20 years after acquisition of the disease

- **Regionally**
  - 17 million have chronic HCV infection
  - 800,000 new infections per year
  - Prevalence of chronic infection: 1%–>10% (EGY & PAK)
  - Most infections acquired in health care settings
Prevalence (%) of Hepatitis C Virus Infection by Country (2001 WHO Estimates)

Palestine

Bahrain

> 10%
2.5 – 10%
1 – 2.5%
No data

Source: WHO WER no. 6, 2002, 77, 41-48

The growing threats of Hepatitis B & C
Hepatitis C treatment is costly

- Hep C is a curable disease

- Goals of Hepatitis C treatment:
  - Primary
    - Eradicate the virus
  - Secondary
    - Prevent progression to cirrhosis
    - Reduce incidence of HCC
    - Reduce need for transplantation
    - Enhance survival

Lindsay KL. Hepatology. 1997;26(suppl 1):71S-77S.
Hepatitis C treatment is costly

- Management of Hep C: NIH Consensus Conference Statement:
  - All patients with chronic hepatitis C are potential candidates for antiviral therapy
  - Treatment is recommended for patients with an increased risk of developing cirrhosis

- **Cost to treat 50% of potential candidates for therapy in EMR is > $125 billion,**
  - Range: $ 26 million in Djibouti to > $ 40 billion in Pakistan & > 53 billion in Egypt
  - Much higher than the cost of implementing the recommended preventive/control measures

### Proportion of hepatocellular carcinoma patients with Hepatitis C and/or B Virus infection in the region

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>No. of patients</th>
<th>HBs Ag only</th>
<th>Anti-HCV only</th>
<th>HBs Ag and Anti-HCV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Islamic Republic of Iran</td>
<td>1999–2004</td>
<td>71</td>
<td>52</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>1995–1996</td>
<td>118</td>
<td>64</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Tunisia</td>
<td>1994</td>
<td>31</td>
<td>55</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>Egypt</td>
<td>1998–2002</td>
<td>750</td>
<td>10</td>
<td>77</td>
<td>11</td>
</tr>
</tbody>
</table>

HBsAg: hepatitis B surface antigen, a marker of chronic HBV infection

Anti-HCV: antibody to hepatitis B core antigen; evidence of current or previous HCV infection
# Proportion of cirrhosis patients with Hepatitis B and/or C Virus infection in the Region

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>No. of patients</th>
<th>% of cirrhosis patients with:</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>HBs Ag only</td>
<td>Anti-HCV only</td>
<td>HBs Ag and anti-HCV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1990</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunisia</td>
<td>1994</td>
<td>168</td>
<td>30</td>
<td>40</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Egypt</td>
<td>1992</td>
<td>39</td>
<td>13</td>
<td>59</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Pakistan</td>
<td>1999–2000</td>
<td>72</td>
<td>14</td>
<td>58</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Somalia</td>
<td>1988–1990</td>
<td>30</td>
<td>47</td>
<td>7</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Key modes of Hepatitis B and C Virus transmission in the Region

Variable according to countries and virus

- **Health care-associated is currently the predominant mode of transmission for both viruses in most countries of the Region**
  - Unsafe injections, invasive procedures, equipment reuse
  - Occupational exposures (WHO estimates 10 000 Hepatitis B infections and 3500 Hepatitis C infections per year among health care workers in the Region) problems with screening in several countries
  - Unsafe transfusions

- **Injecting drug use:** (both Hepatitis B and C Viruses) growing phenomenon in the Region with currently around 1 million injecting drug users

- **Other modes** (mostly for Hepatitis B Virus)
  - Perinatal: responsible for a high proportion of chronic Hepatitis B Virus infection
  - Early childhood: close contact
  - Sexual
Estimated number of infections with Hepatitis B Virus (HBV), Hepatitis C Virus (HCV) and HIV, due to unsafe injections in the Region, 2000

- **HBV**: 2,500,000
- **HCV**: 600,000
- **HIV**: 2,200

Graph showing the estimated number of infections with HBV, HCV, and HIV.
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Situation of hepatitis B vaccination in the Region

- **Goal**
  - Introduce HepB in all countries by 2007

- **Vaccine introduction**
  - 21 countries (from 1989 to 2007)
  - 13 countries give a birth dose: 33% of birth cohort

- **Catch-up campaigns**
  - Four countries report having implemented catch-up campaigns
Year of Hepatitis B vaccine introduction and Hep B vaccination coverage of regional birth cohorts, 1988–2007

Reported coverage %

Year


IQ 85 SA QA OM BA EG IR SY TN JO LB YE MA LY PK AF SD DJ
Monitoring impact of hepatitis B vaccination

- Routine disease surveillance is not the appropriate way to monitor
  - HBV infections in infants and children are asymptomatic
  - Acute disease surveillance does not monitor vaccine impact

- Special studies are needed
  - Based on disease reduction goal
  - Demonstrate impact on HBsAg prevalence
Only Egypt, Saudi Arabia and Oman reported having studies monitoring the impact of hepatitis B vaccination programme on prevalence of chronic HBV infection among children born after vaccine introduction.

Vaccine introduced in August 1990

Chronic HBV infection seroprevalence and HepB coverage
(Oman Hepatitis Survey 2005)

Coverage (%) vs. Seroprevalence (%)

<table>
<thead>
<tr>
<th>Coverage (%)</th>
<th>Seroprevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>0.6</td>
</tr>
<tr>
<td>2.2</td>
<td>1.0</td>
</tr>
<tr>
<td>96</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Vaccine introduced in August 1990
Prevention of blood-borne pathogen transmission in the health care setting: current situation

- **Injection safety**
  - Mainly in the Expanded Programme on Immunization: 17 countries currently use auto-disable syringes
  - Injection safety in the curative system: not well developed, especially in the private sector

- **Weak infection control programmes**
  - Fast and intensive introduction of new technologies and invasive procedures
  - Lack of adequate accompanying measures (in particular in countries with weak health systems): health care workers not well trained, rapid turnover, weak education on blood-borne pathogen transmission and infection control, etc.
Prevention of blood-borne pathogen transmission in the health care setting: current situation (continued)

- **Occupational safety**
  - 11 countries reported implementation of health care worker vaccination programmes, but little information on regularity, targeted population and coverage
  - Frequency of needle-stick injuries is high
  - Lack in several countries of strong educational programmes that could lead to health care worker behaviour change

- **Transfusion safety**
  - Comprehensive screening of blood has not been achieved
  - Many countries continue to use paid donors
  - Several countries do not conduct ongoing monitoring
Prevention of blood-borne pathogen transmission among injecting drug users: current situation

- RC 52 (2005) resolution on substance use & dependance, urging Member States to make available, wide range of interventions for drug users including harm reduction;

- Many countries have not introduced the main harm reduction interventions (Opioid substitution therapy and needle and syringe programmes);

- Where they exist, programmes addressing injecting drug users have very low coverage

- In some countries, national policies and drug control laws and regulations are not conducive to harm reduction
Conclusions

- Chronic liver diseases have emerged as a leading public health problem in the Region
- Hepatitis B and C transmission in the Region is considerably high, in particular in health care settings
- Effective control measures, strategies and tools are available but are rarely well implemented (different reasons including lack of awareness)
- Hepatitis B and in particular C Virus epidemiology is still not well characterized in many countries
- Specialized studies and enhanced surveillance activities are needed to refine prevention strategies and monitor the impact of prevention and control activities
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The Regional Committee:

1. **Endorsed adoption of a regional target of reduction in prevalence of chronic hepatitis B virus infection to less than 1% among children below 5 years of age by 2015**

2. **Urged Member States to:**
   
   2.1. Develop a national strategy to reach the regional target related to reducing the prevalence of chronic hepatitis B virus infection to less than 1% among children below 5 years of age by 2015, if they have not yet done so;

   2.2. Develop and implement a comprehensive national strategy for prevention and control of blood-borne pathogens, supported by necessary legislation and regulation
The Regional Committee:

2.3. Expand hepatitis B vaccination programmes to include:
   – providing a birth dose of vaccine to all infants within the first 24 hours of life
   – vaccination of all persons with occupational exposure to blood and body fluids
   – vaccination of other high-risk populations including injecting drug users;

2.4. Promote infection control through adoption of national guidelines and an accreditation process to monitor compliance, and ensure that all injections are safe;

2.5. Ensure transfusion safety through promoting safe blood donation, strengthening national regulatory activities related to QA and safety of blood products and related in-vitro procedures
The Regional Committee:

2.6. Establish education & communication programmes to increase awareness among the public & health care workers on the mode of transmission of and opportunities to prevent viral hepatitis;

2.7. Rapidly scale-up harm reduction services for injecting drug users;

2.8. Expand treatment services for the chronically infected;

2.9. Improve epidemiological surveillance systems, develop a hepatitis registry & implement sero-surveys in order to produce reliable data to guide prevention and control measures and monitor impact of preventive strategies.
The Regional Committee:

3. **Requested the Regional Director to:**

3.1. **Continue providing technical support to Member States to develop national strategies and plans of action to reach the regional target of reduction in prevalence of chronic hepatitis B virus infection to less than 1% among children below 5 years of age by 2015, and for prevention and control of transmission of blood-borne pathogens;**

3.2. **Facilitate transfer of technology to support local production of necessary medicines & vaccines, where appropriate**

3.3. **Support national studies/surveillance activities in order to better understand the epidemiology of hepatitis C in selected countries;**

3.4. **Assist Member States to secure needed medicines at affordable prices.**
Thank you