Strategic Information for Planning

Presenter:
Antons Mozalevskis
Viral Hepatitis | Medical Officer
WHO Regional Office for Europe
Strategic Information for planning

• Presentation outline:
  – Roles of Strategic Information
  – Global situation with hepatitis surveillance
  – Proposed global hepatitis targets
  – Proposed global indicators for viral hepatitis
Strategic information for planning

Hepatitis landscape: The five “Lacks” or “opportunities”? 

- Lack of data
- Lack of engagement
- Lack of funding
- Lack of planning
- Lack of action
Strategic Information for planning

• Three roles of strategic information:
  1. Understand the epidemic and change resulting from interventions
  2. Track and gauge health sector’s response to hepatitis
     – Health system inputs
     – Intervention coverage
     – Quality of services
     – Outcomes and impact
  3. Inform programme improvement, assuring quality and maximal return on resources invested and helping to identify bottlenecks and opportunities
### Strategic Information for planning

- **Viral hepatitis surveillance**

<table>
<thead>
<tr>
<th>Purpose of surveillance</th>
<th>Surveillance methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Detect outbreaks and monitor incidence</td>
<td>• Syndromic or case reporting</td>
</tr>
<tr>
<td></td>
<td>• Laboratory-based surveillance</td>
</tr>
<tr>
<td>2. Assess prevalence of chronic hepatitis infection</td>
<td>• Seroprevalence surveys</td>
</tr>
<tr>
<td></td>
<td>• Laboratory-based surveillance</td>
</tr>
<tr>
<td>3. Assess incidence and mortality of disease outcomes</td>
<td>• Cancer registry</td>
</tr>
<tr>
<td></td>
<td>• Vital registration systems</td>
</tr>
<tr>
<td>4. Evaluate impact of prevention, care, control and treatment programmes</td>
<td>• Seroprevalence surveys</td>
</tr>
<tr>
<td></td>
<td>• Hospital-based studies</td>
</tr>
<tr>
<td></td>
<td>• Laboratory-based surveillance</td>
</tr>
<tr>
<td></td>
<td>• Pharmacy data</td>
</tr>
</tbody>
</table>
Strategic Information for planning

• Viral hepatitis surveillance
  – Fragmented surveillance systems with low coverage
  – Lack of national prevalence estimates for many countries
  – Very little disease outcome surveillance
  – Lack of data on status of national or global response, in particular status of treatment scale-up
Strategic information for planning

Member States with national surveillance systems for chronic hepatitis
(WHO Global Policy Report)

55 (54.4%) MS for HBV
51 (50.5%) MS for HCV
Strategic information for planning

• World Health Assembly urged Member States:
  – Develop and implement robust surveillance systems to support decision-making on evidence-based policy (2014);
  – Implement and/or improve epidemiological surveillance system and strengthen laboratory capacity in order to generate reliable information for guiding, prevention and control measures (2010)

• World Health Assembly requested WHO:
  – In consultation with MS, develop a system for regular monitoring and reporting on the progress in viral hepatitis prevention, diagnosis and treatment (2014);
  – Improve the assessment of global and regional impact and estimate the burden of viral hepatitis (2010)
Strategic information for planning

- Global Health Sector Strategy on Viral Hepatitis, 2016 - 2021

A strategy that **identifies priorities** and **sets global targets** for a coordinated global response

A vision of **elimination** of viral hepatitis as a **public health issue of concern**

Final draft to be presented to the **69th WHA** in May 2016 for adoption
Strategic information for planning

• For the first time: global hepatitis targets

• Impact targets across hepatitis B and C – incidence and mortality by 2030

• Supported by coverage targets for key interventions
  ➢ Balance feasibility with ambition
  ➢ Set agenda to 2030 with milestones for 2020
Strategic information for planning

• Proposed global hepatitis **impact** targets

<table>
<thead>
<tr>
<th>Impact</th>
<th>Parameter</th>
<th>2030</th>
<th>2020</th>
<th>Baseline 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence</td>
<td>New cases of chronic Hepatitis B and C</td>
<td>90% reduction</td>
<td>30%</td>
<td>Approximately 6-10 million infections reduced to less than 1 million by 2030 (95% decline in HBV infections, 80% decline in HCV infections).</td>
</tr>
<tr>
<td>Mortality</td>
<td>Hepatitis B and C deaths</td>
<td>65% reduction</td>
<td>10%</td>
<td>1.4 million deaths reduced to less than 500,000 by 2030 (65% for both HBV, HCV)</td>
</tr>
</tbody>
</table>
**Strategic information for planning**

- **Proposed global hepatitis **intervention** targets**

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Parameter</th>
<th>2030</th>
<th>2020</th>
<th>Baseline 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. HBV vaccin.</td>
<td>Childhood vaccine coverage</td>
<td>90%</td>
<td>90%</td>
<td>81%</td>
</tr>
<tr>
<td>2. HBV MTCT (mother to child)</td>
<td>BD vaccine coverage or other approach to prevent MTC</td>
<td>90%</td>
<td>50%</td>
<td>38%</td>
</tr>
<tr>
<td>3. Safe injection</td>
<td>Injections administered with safety engineered devices (Safe injection coverage in and out of health facilities)</td>
<td>90%</td>
<td>50% coverage</td>
<td>5%</td>
</tr>
<tr>
<td>4. Harm reduction</td>
<td>Number of needles/PWID/year (as part of effective harm reduction package)</td>
<td>300</td>
<td>200</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>300 (75% cover.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. HBV treatm.</td>
<td>Treatment eligible persons with chronic HBV treated</td>
<td>80%</td>
<td>8 million treated (Estimated 5m HBV, 3m HCV)</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>6. HCV treatm.</td>
<td>Treatment eligible persons with chronic HCV treated</td>
<td>80%</td>
<td></td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>
Strategic information for planning

- GHSS Strategic Direction 1: Information for evidence-based policy and action
  - Establishing a Framework for Strategic Information
  - Building a comprehensive system for data collection, analysis and monitoring
  - Using data to support decision-making on evidence-based policy
Strategic information for planning

- Proposed global indicators for viral hepatitis B and C

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition</th>
<th>Data sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prevalence</td>
<td>Number and % of people living with chronic hepatitis B and C infection</td>
<td>- Derived from modelling, surveillance, surveys and programme data</td>
</tr>
<tr>
<td>2. Incidence</td>
<td>Number and % of new hepatitis B and C infections</td>
<td>- Estimated by repeated prevalence studies in defined populations</td>
</tr>
</tbody>
</table>
| 3. Mortality | Number of viral hepatitis B and C-related deaths | - National Cancer Registry data  
- National Civil Registration and Vital Statistics (CRVS) data  
- Hospital data  
- Global databases |
### Strategic information for planning

- Proposed global indicators for viral hepatitis B and C

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition</th>
<th>Data sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Testing</td>
<td>% of adults and children who were tested for hepatitis B and C</td>
<td>• Derived from programme records</td>
</tr>
<tr>
<td>5. Vaccination</td>
<td>• % of new-borns receiving HBV birth dose</td>
<td>• Derived from surveillance, surveys and programme data</td>
</tr>
<tr>
<td></td>
<td>• % of infants receiving 3 doses of HBV vaccine by 12 months</td>
<td></td>
</tr>
<tr>
<td>6. Injection Safety</td>
<td>% of health care facilities where all injections are given with new, disposable, single-use injection equipment</td>
<td>• Health care facility surveys</td>
</tr>
<tr>
<td>7. Blood Safety</td>
<td>% of health facilities providing blood transfusions that meet SARA requirements</td>
<td>• Health care facility surveys</td>
</tr>
</tbody>
</table>
Strategic information for planning

- Proposed global indicators for viral hepatitis B and C

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition</th>
<th>Data sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Harm Reduction</td>
<td>Needles/syringes distributed per person who injects drugs</td>
<td>• Derived from modelling, surveillance, surveys and programme data</td>
</tr>
<tr>
<td>9. Treatment coverage</td>
<td>% treatment eligible persons with chronic hepatitis treated</td>
<td>• Programme records (clinical records of health care facilities), modelling estimates for the denominator</td>
</tr>
<tr>
<td>10. Cure (HCV) or viral suppression (HBV)</td>
<td>Proportion of patients:</td>
<td>• Programme records</td>
</tr>
<tr>
<td></td>
<td>• with suppressed virol load on treatment for HBV</td>
<td>• Cohort studies</td>
</tr>
<tr>
<td></td>
<td>• cured after HCV treatment</td>
<td></td>
</tr>
</tbody>
</table>
Strategic information for planning

• Further steps?
  – WHO «Guidance on Indicators for Viral Hepatitis B, C, D» to be finalised
  – WHO «Guidance on Viral Hepatitis Surveillance for Low- and Middle-Income Countries» to be published
  – Global viral hepatitis «Strategic Information Framework»
  – «Consolidated Strategic Information Guidance»
Strategic Information for Planning

• Question 1: what are the challenges in viral hepatitis surveillance in your country?

• Question 2: what do you think about proposed viral hepatitis global targets and indicators?
Surveillance of Hepatitis B/D and C in Germany - Recent data, changes and activities

World Hepatitis Summit
Glasgow, Scotland 2-4 September 2015

Dr. Angela Neumeyer-Gromen, MPH
Department for Infectious Disease Epidemiology
Unit for HIV/AIDS, STI and blood-borne Infections
Germany at a Glance

- 82 mio inhabitants
  - 9% have citizenship other than German
  - approximately 20% have “migration background”
- 16 states (Bundesländer)
Routine Notification of HBV/HDV and HCV on a named-patient basis
Protection against Infection Act/ Infektionsschutzgesetz (IfSG)

§ 6 IfSG Abs. 1 Nr. 1

§ 7 IfSG Abs. 1
Reported HBV cases to the RKI 1997-2014
HBV: Transmission

Unknown (n=671; 89%)

Probable route of transmission (n=84; 11%)

- Unknown (n=671; 89%)
- MSM (n=27; 32%)
- Heterosex. contact with Hepatitis-B-infected partner (n=19; 23%)
- Living together with HBsAG positive (n=19; 23%)
- PWID (n=12; 14%)
- Received blood products (n=5; 6%)
- Dialysis (n=1; 1%)
- Perinatal transmission (n=1; 1%)
Reported HCV cases to the RKI 1997-2014
HCV: Transmission

- Unknown transmission (n=4262; 73.3%)
- Probable route of transmission (n=1555; 26.7%)
  - PWID (n=1267; 81.5%)
  - Received blood products (n=108; 6.9%)
  - MSM (n=87; 5.6%)
  - Dialysis (n=15; 1.0%)
  - Perinatal transmission (n=6; 0.4%)
New German case definitions in comparison to ECDC case definitions since 2015

- **Mandatory:** confirmation of HBV-DNA/ HCV-RNA or antigen

  **Additional:** all other laboratory/ clinical criteria

- **Main harmonization with ECDC:**
  - HBV: Clinical criteria not mandatory any more => a more realistic picture of the natural history of disease as most acute HBV infections are not symptomatic

- **Main difference to ECDC:**
  - in the German system, confirmation by anti-HBc-IgM alone (HBV) or anti-HCV alone (HCV) is not sufficient anymore, but sufficient to fulfill ECDC case definitions.

=> in the German system, now, the direct pathogen confirmation is mandatorily needed as a more distinct measurement of viraemia (activity of infection)
Prevention: Current STIKO recommendations for HBV vaccination and changes since 2013

- General childhood vaccination since 1995
- Prevention of perinatal transmission (category P)
- Postexposure immune prophylaxis (category P)
- Revised indication groups*
  1. Category I: Persons at risk of severe hepatitis B due to existing or expected immunodeficiency or suppression or due to other preexisting diseases
  2. Category I: Persons at increased risk of non-occupational exposure
  3. Category B: Persons at increased risk of occupational exposure
  4. Category R: At-risk travellers

*Harder et al. 2013
Prevention: HBV vaccination in pre-school children according to § 34 Abs. 11 IfSG
Examples of important additional projects and ongoing studies in Germany

---

**... with respect to particular risk groups**

<table>
<thead>
<tr>
<th>Study Type</th>
<th>Description</th>
<th>Populations</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRUCK study</td>
<td>Prevalence, knowledge, and behaviour in PWID</td>
<td>N=2077 (RKI)</td>
<td>Prevalence HBV/HCV: 5-33%/42-75%</td>
</tr>
<tr>
<td>HIV-seroconversion study</td>
<td>HIV-positive MSM</td>
<td>N=1843 (RKI)</td>
<td>Co-infections with HBV/ HCV: 1.7%/8.2%</td>
</tr>
<tr>
<td>Studies in primary care</td>
<td></td>
<td>(N=1313, N=21008)</td>
<td>Prevalence HBsAG/ HCV in patients with migration background up to 3.6%/ 1.9% (up to 80% without knowledge about the disease)</td>
</tr>
<tr>
<td>Inhabitants of nursing homes</td>
<td></td>
<td></td>
<td>Outbreaks due to unhygienic blood glucose monitoring</td>
</tr>
</tbody>
</table>

---

*Zimmermann et al. 2015, **Jansen et al. 2015, ***Heidrich et al. 2014, Wolffram et al. 2015, ****Diercke et al. 2015, Seiz et al. 2015
Examples of important additional projects and ongoing studies in Germany

... with respect to the general population

DEGS1 Survey of the general population, N=7047 (RKI):*
Prevalence anti-HBc and HBsAG: 0.3%
Prevalence HCV-RNA: 0.2%

HCV-therapies of people with statutory health insurance (85% of German population, RKI):** 6500 persons treated with DAAs in March 2015 => 25000 people could be healed per year in Germany (>90% efficacy, 12 weeks treatment)

... with respect to both

HEP-Epi project (RKI):*** Scoping Review with evidence mapping and systematic search for secondary data about epidemiology and care of HBV and HCV in Germany

*Poethko-Müller et al. 2015, **Kollan et al. 2015, ***www.rki.de
Summary: Public Health relevance and prospects

• Routine Surveillance is a basic tool
  • For health monitoring and disease control (Incidence, early warning, time trends, routes of transmission and prevention)
  • New German case definitions provide more realistic picture of active infections even though distinction between acute and chronic disease is not always possible

• Limitations
  • Restriction to incidence data: For chronic disease, prevalence is also needed
  • For signal detection look-back-loops are essential to differentiate between surveillance of infections and surveillance of testing
  • Epidemiological information on transmission, risk groups and deducible preventive action are limited or missing (eg. migration)
Summary: Public Health relevance and prospects

=> Supplementary studies to routine surveillance are important
  – particularly in vulnerable groups (PWID, MSM, people with migration background, prisoners etc.)
  – on prevalence, knowledge, awareness and behaviour to improve prevention and care

=> Special focus for HBV/HDV: Improvement of vaccination rates

=> Special focus for HCV: High disease burden and therapy improvements/ therapy rates

=> Hepatitis strategy
Strategic Information - Why Does It Matter

John W. Ward, M.D.
Division of Viral Hepatitis
Centers for Disease Control and Prevention
Atlanta, Georgia, USA
Roles
Hepatitis C Testing and Cure

US Institute of Medicine, 1988
ASSESSMENT

- Functions
  - Monitor the HCV infected populations0- incidence, prevalence, mortality
  - Identify and investigate trends in transmission and disease
  - Guide priority-setting
- Sources
  - Case surveillance
  - Health surveys
  - Vital records (births, deaths)
  - Medical records
Current Surveillance

• Health departments receive and process positive test results
  – Surveillance is case-based
  – Acute (all) or chronic (not all states)
  – Capacity for follow-up is limited

• Supplemented with large databases
  – NHANES
  – Vital statistics
  – Ambulatory care visits, hospitalizations
Reported Cases of Acute Viral Hepatitis
United States - 2012

N=53,000 cases
Surveillance of Acute HCV Infection - 2013

- Changes in rates of Hepatitis C virus cases reported by state, United States, 2010-2013
  - State did not report data
  - Rate decreased
  - Rate unchanged
  - Rate increased

Map showing changes in rates of new Hepatitis C virus cases.
Data from National General Population Surveys

<table>
<thead>
<tr>
<th>Virus</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBV</td>
<td>700,000 – 1.4 million</td>
</tr>
<tr>
<td>HCV</td>
<td>2.2 – 3.5 million</td>
</tr>
</tbody>
</table>

* National Vital Statistics System
Annual age-adjusted mortality rates from hepatitis B and hepatitis C virus and HIV infections
United States, 2000-2013

Policy Development
U.S. Viral Hepatitis Action Plan

- Educating Providers and Communities to Reduce Health Disparities
- Improving Testing, Care, and Treatment to Prevent Liver Disease and Cancer
- Strengthening Surveillance to Detect Viral Hepatitis Transmission and Disease
- Eliminating Transmission of Vaccine-Preventable Viral Hepatitis
- Reducing Viral Hepatitis Cases Caused by Drug-Use Behaviors
- Protecting Patients and Workers from Health-Care-Associated Viral Hepatitis
National Recommendations for HBV and HCV Testing

- **HBV testing – June 2014**
  - Foreign born- persons from Asia, Africa
  - (countries > 2% prevalence)
  - MSM, IDU

- **HCV testing - June 2013**
  - Persons born 1945-1965
  - Persons who inject drugs
  - history of incarceration
  - Received transfusion < 1992; plasma<1987
  -

Assurance
Guide Testing and Linkage to Care
HCV Test, Care, and Cure Continuum

~ 3 million persons living with HCV

HCV infected: 80%, HCV care: 38%, HCV RNA: 23%, Treated: 11%, SVR: 6%

# HCV Screening & Testing at Venues Serving PWID

*Prevention and Public Health Fund*

January 2013—March 2014

<table>
<thead>
<tr>
<th>Location</th>
<th># of Tests</th>
<th>% anti-HCV+</th>
<th>% RNA Tested</th>
<th>% RNA +</th>
<th>% Referred to Care</th>
<th>% Attended First Appt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>938</td>
<td>17.3</td>
<td>15.4</td>
<td>76.0</td>
<td>84.2</td>
<td>26.3</td>
</tr>
<tr>
<td>Chicago</td>
<td>672</td>
<td>22.2</td>
<td>40.9</td>
<td>80.3</td>
<td>51.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>2175</td>
<td>8.7</td>
<td>29.6</td>
<td>89.3</td>
<td>100.0</td>
<td>82.0</td>
</tr>
<tr>
<td>Maine</td>
<td>795</td>
<td>28.1</td>
<td>51.1</td>
<td>60.5</td>
<td>98.6</td>
<td>52.2</td>
</tr>
<tr>
<td>New York City</td>
<td>2527</td>
<td>17.6</td>
<td>63.4</td>
<td>71.3</td>
<td>71.1</td>
<td>23.4</td>
</tr>
<tr>
<td>Oakland, CA</td>
<td>579</td>
<td>32.0</td>
<td>18.4</td>
<td>82.4</td>
<td>100.0</td>
<td>21.4</td>
</tr>
<tr>
<td>Seattle, WA</td>
<td>457</td>
<td>56.9</td>
<td>30.0</td>
<td>66.7</td>
<td>86.5</td>
<td>5.8</td>
</tr>
<tr>
<td>Virginia</td>
<td>761</td>
<td>36.8</td>
<td>75.4</td>
<td>78.2</td>
<td>99.4</td>
<td>27.3</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>1127</td>
<td>16.1</td>
<td>107.1</td>
<td>73.3</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10031</strong></td>
<td><strong>20.7%</strong></td>
<td><strong>50.9%</strong></td>
<td><strong>73.5%</strong></td>
<td><strong>87.9%</strong></td>
<td><strong>42.0%</strong></td>
</tr>
</tbody>
</table>

Venues Include: Syringe Exchange Programs; Drug Treatment Centers; Health Departments; Methadone Clinics; Corrections; Shelters

*CDC unpublished data*
Conduct Intervention Trials
Emergency Department HCV Testing

- Urban ED
- Largely African-American population
- Electronic prompt for testing
- Intake clerk takes HCV screening history
- Automatic anti-HCV EIA test ordered
- Patient educated if positive
- Linked to university liver clinic
- 87% test acceptance
Emergency Department HCV Testing: University of Alabama, Birmingham

Total tested for HCV - 1529

- 11% of tested
- 88% of anti-HCV+
- 68% of RNA tested
- 53% of HCV RNA+ referred*
- 39% of HCV RNA+*

*Not part of original project design
<table>
<thead>
<tr>
<th>Agency Name</th>
<th>Persons Tested</th>
<th>HBsAg Positive</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Services Committee New York City</td>
<td>2,152</td>
<td>184</td>
<td>8.6%</td>
</tr>
<tr>
<td>Asian Health Coalition- Chicago</td>
<td>1,552</td>
<td>71</td>
<td>4.6%</td>
</tr>
<tr>
<td>City and County of San Francisco</td>
<td>7,740</td>
<td>431</td>
<td>5.6%</td>
</tr>
<tr>
<td>Minnesota Department of Health</td>
<td>2,733</td>
<td>174</td>
<td>6.4%</td>
</tr>
<tr>
<td>Multnomah County Health Oregon</td>
<td>2,087</td>
<td>77</td>
<td>3.7%</td>
</tr>
<tr>
<td>Ohio Asian Health Coalition</td>
<td>2,635</td>
<td>167</td>
<td>6.3%</td>
</tr>
<tr>
<td>University of California, Davis</td>
<td>1,004</td>
<td>74</td>
<td>7.4%</td>
</tr>
<tr>
<td>University of California, San Diego</td>
<td>1,832</td>
<td>76</td>
<td>4.1%</td>
</tr>
<tr>
<td>University of Florida - Jacksonville</td>
<td>1,409</td>
<td>63</td>
<td>4.5%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>23,144</strong></td>
<td><strong>1,317</strong></td>
<td><strong>5.7%</strong></td>
</tr>
</tbody>
</table>
Strategic Information - Why Does It Matter

- **Assessment** - Data to identify modes of transmission, risk populations, and burden of disease
- **Policy development** - Data to tailor policies to meet local needs
- **Assurance** - Data to monitor and evaluate interventions and return information for quality improvement
IT TOOK US 25 YEARS TO BRING HIM TO HIS KNEES... NOW LET'S FINISH HIM OFF!...