Strengthening Immunization Systems and Introduction of Hep B in Central and Eastern Europe, NIS

Cold Chain, Logistics & the Safety of Injections

3rd Meeting
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Cold Chain & Logistics

Ensure that “100%” of vaccines used in all NIP are of assured quality
Effective Vaccine Store Management Initiative

WHO-UNICEF joint statement on effective vaccine store management

10 Global criteria for effective vaccine store management

Model quality plan = Reference

Assessment questionnaire = know how you will be assessed

Self-appraisal guidelines = do it yourself
Facility appraises its practices

- Meets the standards
  - Request external assessors
    - Meets the global criteria
    - Doesn’t meet the global criteria
      - Award
      - Certification in process
        - Analyze problem areas and schedule further action

- Recognizes need for improvement
  - Studies the Global Criteria analysis of problem areas and develops plan and schedule to become more efficient.
  - Implements plan of action until it becomes usual practice
10 Criteria

1. pre-shipment and arrival procedures
   VAR, Lot release / NRA, TTM

2. Storage within temperature ranges.
   Proper devices, Documentation

3. Storage capacity of the store
   Storage capacity / Volume max Vaccines

4. Equipment and transport available
   Requirement / Inventories / Replacement

5. Maintenance of buildings, Equipment and Vehicles
   System in place and financed
Use conditioned or chilled water packs for vaccine transportation
Frozen Icepacks = OPV
10 Criteria

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10 Criteria

6. Effective stock management
   Stock out; Records/Inventory

7. Quality of deliveries to next level
   Planned/actual; Short shipments

8. Vaccine wastage during transport
   Use of VVM, FW

9. Standard Operating Procedures
   Evidence of SOPs

10. Adequate human and financial resources
    Yearly institutional development plan
Moldova / Turkmenistan / Albania / Kyrgyzstan
VMTC Coordination Unit
VMTC Strategic Advisory Committee
Training centre ENGLISH
Training centre FRENCH
Training centre RUSSIAN
Training centre SPANISH

Adult learning participatory
5 days training course
15 participants
selective process

Mentors
WHO and UNICEF Country Offices

Vaccine Management
Vaccine Store Management
Assessments

VM project
EVSM initiative
Safe administration of vaccines

Ensuring that all injections for immunization

a) do not harm the recipient

b) do not expose the provider to any avoidable risks
Injection Safety - National Programme

• Main steps to improve/secure injection safety
  ➢ Picture the situation about injection safety and waste disposal => comprehensive assessment
  ➢ Develop/revise national policy and plan of action
  ➢ Gather the required competences to find options and implement the plan => multi-sectoral working group
  ➢ Test and select affordable technical options => pilot projects, cost studies, implementation programmes
  ➢ Improve behaviors and practices => training and advocacy for health staff and general public
  ➢ Ensure proper budgeting and secure funds
The Safety of Injections

- **Monitoring**
  - Assessment of the safety of injections for immunization
    - Provision of sufficient quantity of supplies
    - Respect of injection best practices
  - Existence of a Committee with a designated focal point
  - Policy and plan of action in place
Results from 8 countries *ARM, BUL, GEO, KAZ, KYR, MOL, TAJ, UKR*

### Risk to patients

<table>
<thead>
<tr>
<th>Risk</th>
<th>Proportion</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of supplies (syringes)</td>
<td>84.8%</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>Respect of sterility for administration</td>
<td>99.6%</td>
<td>93</td>
<td>100</td>
</tr>
<tr>
<td>Respect of sterility for reconstitution</td>
<td>98.8%</td>
<td>78</td>
<td>100</td>
</tr>
<tr>
<td>Reconstitution with correct diluent</td>
<td>96.8%</td>
<td>59</td>
<td>100</td>
</tr>
</tbody>
</table>

### Risk to providers

<table>
<thead>
<tr>
<th>Risk</th>
<th>Proportion</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recapping needles</td>
<td>33.3%</td>
<td>21</td>
<td>61</td>
</tr>
<tr>
<td>Needle sticks</td>
<td>18.0%</td>
<td>8</td>
<td>30</td>
</tr>
<tr>
<td>Use of safety boxes</td>
<td>35.7%</td>
<td>0</td>
<td>91</td>
</tr>
</tbody>
</table>

### Risk to the community

<table>
<thead>
<tr>
<th>Risk</th>
<th>Proportion</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of sharps around HCF</td>
<td>09.3%</td>
<td>2</td>
<td>31</td>
</tr>
<tr>
<td>Incineration</td>
<td>10.2%</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>Open burning</td>
<td>41.2%</td>
<td>25</td>
<td>88</td>
</tr>
</tbody>
</table>

Proportions weighted by population figure
Injection Safety – Challenges

- Several improvements in the recent years
  - disposable equipment
  - safe container
  - reinforced policies
  - increased awareness, etc.

- limitations
  - Curative / Immunization
  - Risk of misuse
  - Increased volume of waste
  - Disposal of sharps
  - Increased costs
Injection Safety – Technical Issues

Disposable / AD syringes

- Risk of being reused
- WHO/Unicef/UNFPA Statement: Only AD by 2003
- Higher price: 0.06 USD
- Disposal of AD syringes: Options to be assessed (pilot project on AD recycling)
- Potential technology transfer
Injection Safety – Technical Issues

- Required condition to contain all sharps to prevent injuries
- Use strongly recommended even if decontamination
- Wide range of containers existing (plastic, reinforced carton)
- Could be locally manufactured
- Largely used worldwide
- Cost of containers needs to be budgeted => part of the safety
EURO Introduction of ADs & SDBs

28 countries from CEE, NIS and Turkey  2000 - 2003

Auto-Disable Syringes  Safe Disposal Boxes

• Sustained use of AD’s & SDB depends on costs
• Technology Transfer for local production
Waste Collection & Treatment

Urban Setting
Transport off Site

Rural Setting
Direct Disposal

Autoclave

Wet disinfection

Recycling Plant

Incineration (>800°C)

Municipal Landfill

Open burning

Burial (Protected Pits)
High risk of needle sticks due to manipulation of sharps after injection
• Disassembling
• Soaking, rinsing
• Collection and
• Disposal/Recycling
**Sharp Containment Options**

- **After Injection**
  - Separation sharps
  - Needle Remover

- **Containing sharps**
  - Desinfection
  - Chemical/Autoclave

- **Safety Box**
Injection Safety – Technical Issues

- Prevent the risk of reuse for regular disposable syringes
- Required when disposal process needs separation needle/syringe (e.g. recycling)
- Avoid dismantling by hands
- Recent PATH contamination surface study: NO evidence
- Cost: 25-100 USD
- Need for maintenance
Conclusion

Vaccine Management

Safety of Injection

Compliance problems
Use chilled water packs