Medical device donation guidelines for Ebola outbreak
20 January 2015

Requirements
A. Appropriate, robust, durable/disposable medical equipment
1) High quality device or equipment:
   • Regulatory clearance
   • Capable of operating with limited-resource for electricity, water and compressed gas
   • Minimum six-month shelf life
2) User manuals, service (maintenance) manuals, disposal instructions and software are in health worker’s language:
   • in French for Guinea, Democratic Republic of Congo
   • in English for Liberia, Nigeria and Sierra Leone
3) Availability of supplies for a minimum one year of operation:
   • Accessories,
   • Consumables,
   • Reagents (operation and cleaning),
   • Maintenance materials (spare parts and tools),
   • Test and calibration equipment and reagents, 5 per country, if possible.

B. Concerning unstable or lacking running water supply, of varying quality may require:
   • Device be disposable,
   • Surfaces can be cleaned/disinfected/sterilized with appropriate disinfectant,
   • Barriers can be added between patient and device, depending on the device,
   • Cleaning/disinfection/sterilization procedure and consumables are shipped with device.

C. Concerning limited or unstable power supply:
1) Medical devices or equipment may require:
   • Battery-operated devices,
   • Extra batteries or re-chargeable batteries,
   • Backup generators,
   • Current stabilizer.
2) Sources of energy may require in countries:
   • Uninterruptable power supply to protect from blackouts and unstable power supply,
   • Multiple extension connections with fuse spike detection,
   • Correct plug adaptor,
   • Transformer, etc.

<table>
<thead>
<tr>
<th>Country</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Plug types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democratic Republic of Congo</td>
<td>220 V</td>
<td>50 Hz</td>
<td>C or D or E</td>
</tr>
<tr>
<td>Guinea</td>
<td>220 V</td>
<td>50 Hz</td>
<td>C or F or K</td>
</tr>
<tr>
<td>Liberia</td>
<td>120 V, 220V</td>
<td>50 or 60 Hz</td>
<td>A or B or C or E or F</td>
</tr>
<tr>
<td>Nigeria</td>
<td>230 V</td>
<td>50 Hz</td>
<td>D or G</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>230 V</td>
<td>50 Hz</td>
<td>D or G</td>
</tr>
</tbody>
</table>

Sources: [http://www.iec.ch/worldplugs/list_bylocation.htm](http://www.iec.ch/worldplugs/list_bylocation.htm) and [http://www.iec.ch/worldplugs/](http://www.iec.ch/worldplugs/)

3) Used with atmospheric or compressed gas supply, or accessory equipment is included to compress gas
4) Good ease of use and ease of maintenance